

Case Based Urology Learning Program

Resident's Corner: *UROLOGY*

Case Number 20

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A 65-year-old man presents with recurrent UTIs, irritative voiding symptoms and occasional but definite pneumaturia. The patient also has intermittent LLQ pain, irregular bowel movements and occasional fever. SCr is 1.0 mg/mL. Urine culture grows 3 different bacteria.

What is the differential diagnosis and what is the most likely diagnosis?

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Enterovesical fistula (ECF) due to:

Diverticulitis

Cancer

Crohn's disease

UTI due to gas forming bacteria

Emphysematous cystitis

Diverticulitis is the most common cause of enterovesical fistula and given the associated LLQ pain and irregular bowel movements, this is probably the most likely diagnosis.

What other history would be helpful?

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Further details about bowel habits: constipation, loose BMs, blood in stool

Further details about lower urinary tract symptoms or hematuria

Personal history of diverticulitis, inflammatory bowel disease

Personal history of diabetes, steroid use, or other factors that could be immunosuppressive

Family history of colon cancer

What would you look for on physical examination?

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Lymphadenopathy

Abdominal mass or tenderness

Suprapubic fullness or tenderness

Careful exam of external genitalia

Rectal exam for mass and to evaluate prostate

What further evaluation would you pursue, given concern about enterovesical fistula (ECF)?

What would you be looking for on each study?

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What would you be looking for on each study?

Evaluation should include a CT scan with oral/rectal contrast with imaging before and after IV contrast. Findings suggestive of an ECF due to diverticulitis include contrast or gas in the bladder (in the absence of recent instrumentation), a thickened bladder wall, and diverticulosis. CT can also evaluate for a mass suggestive of colon cancer or pelvic abscess.

A cystoscopy will typically show an inflamed area near the dome or to the left for diverticulitis or colon cancer, and on the right side for Crohn's disease. More specific findings can include actual visualization of a fistula with drainage of bowel contents or pus into the bladder.

A colonoscopy should also be considered to exclude colon cancer.

What other tests could be considered?

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Other potentially useful tests include:

Poppy seed test with demonstration of poppy seeds in the urine 48 hours after oral ingestion strongly suggests the diagnosis. A similar but more expensive test involves oral ingestion of a chromium radioisotope with scanning of the urine 24 and 48 hours later.

Barium enema in an effort to visualize a fistula, along with examination of the urine sediment afterwards for the presence of barium.

Cystogram in an effort to visualize the fistula.

The sensitivity of barium enema and cystogram are relatively low and these tests are typically not performed for this purpose.

CT reveals classic findings for enterovesical fistula due to diverticulitis but no mass or abscess are identified. Colonoscopy demonstrates diverticulosis with inflammation but no evidence of cancer. Cystoscopy demonstrates marked inflammation centered primarily to the left side of the dome.

How would you manage this patient?

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This patient should be explored for sigmoid resection under antibiotic coverage.

For the bladder, the fistula tract should be excised with debridement back to healthy tissue along with primary closure of the bladder.

After primary bowel anastomosis, an omental flap can be interposed between the bladder and the bowel.

Temporary ureteral stents can be considered to minimize the risk of ureteral injury (and to facilitate identification of ureteral injury if it occurs), and might be particularly useful if a pelvic abscess or locally invasive cancer was present.

Selected Reading

Campbell/Walsh Urology: 9th Edition, Chapter 72,
Urinary Tract Fistula, Rovner ES, pages 2351-3, 2007.

Kwon EO, Armenakas NA, Scharf SC, Panagopoulos G,
Fracchia JA. The poppyseed test for colovesical fistula:
big bang, little bucks! *J Urology* 2008;179:1425-7.

Topic:

Inflammatory/Infections

Subtopics:

Enterovesical Fistula