Not the Usual Suspects: Recurrent Urinary Tract Infections
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Patient is a 76 yo female with hypertension, anxiety, osteoporosis, hyperlipidemia, diverticulitis, s/p TAH, history of proteinuria, type 2 diabetes mellitus since 1971. Under my care she had 3 separate urinary tract infections for which she was prescribed 3 courses of Ciprofloxacin over the course of 6 weeks. After the third course of antibiotics the urinary tract infection recurred so I referred her to urology.

Her Urinalysis and cultures are shown below:

Urinalysis:

Component Latest Ref Rng & Units	7/28/2020	8/25/2020	8/25/2020	9/8/2020
	10:02 AM	1:34 PM	1:34 PM	2:00 pm
WBC, UA Negative	>30 (A)	3+ (A)	>30 (A)	>30(A)

Urine Culture data:

9/08/20: Viridans streptococcus group

8/25/20: Klebsiella pneumonia

8/01/20: Escherichia coli

Before she saw Urology outpatient she presented to the hospital with new onset lower back pain. CT scan was done at that time. CT scan showed diverticulitis sigmoid mid colon very close to bladder suggesting colon bladder fistula. For perspective she had prior colonoscopies. 8/27/14- finds on colonoscopy showed multiple small and large –mouth diverticula in entire colon, more so in left colon, 5 mm sessile polyp proximal colon. Then again 2/22/18: colonoscopy showed multiple small and large-mouth diverticula in sigmoid colon. After her CT scan on recent hospital admission colonoscopy 12/18/20 showed severe diverticulosis sigmoid colon, no fistula seen.

At the urology appoint she had cystoscopy showing fistula noted left upper outer quadrant. Shortly thereafter she was scheduled for surgery to repair the fistula. Unfortunately her pre-op ekg showed SVT with heart rate = 181 and subsequent cardiac cath revealed 70-80% stenosis of the left coronary artery and on 2/2/21 she had 5 stents were placed in the mid to distal LAD. Once stabilized she will go for repair of the fistula.

Discussion:

This 76 year old woman had been having recurrent UTI over a period of 1-2 months before she developed mild lower abdominal pain which led to a CT scan being done at a ER which first showed the colovesical fistula. It is possible she had had this fistula for several months before she developed the abdominal pain.

The most common causes of recurrent urinary tract infections in woman over age 65(1) include diabetes, urinary retention, functional disability, recent sexual intercourse, prior history of uro-gynecology surgery, urinary retention and urinary incontinence. This patient did have diabetes but her latest hga1c = 6.2 on 2/20/20 and she had a caesarian section and total abdominal hysterectomy 30-40 years ago.

The cause of this woman's recurrent urinary tract infection most likely is the colovesical fistula and she did have a history of diverticulitis. These fistulae occur is 2% to 22% of patients with documented diverticulitis while 10-15% of patients requiring surgery for diverticulitis have a fistula (2,3).

In one surgical practice (4) the causes of colovesicular fistula were:

Diverticular disease	75%
Colon cancer	16%
Bladder cancer	8%

Other risk factors for the fistula include a history of Crohn's disease, radiotherapy and iatrogenic surgical injuries.

Most common presenting symptoms (4) were:

Pneumaturia	77%
Urinary tract infections	45%
Fecaluria	36%
Hematuria	22%

It should be noted that a recent colonoscopy (12/18/20) showed no evidence of colon cancer.

The ability of preoperative diagnostic tests to detect a colovesicular fistula were (4):

CT scan	90%
Barium enema	20%
Cystography	11%
Cystoscopy, ivp, colonoscopy	0%

This 76 yo woman has just had 5 stents in her left anterior descending artery and is awaiting surgical removal of this fistula. The recommended treatment is colonic resection followed by immediate anastomosis (one stage procedure) (5, 6).

In summary, in a patient with recurrent urinary tract infections and a history of diverticulitis, a colovesical fistula should be considered and a CT of the abdomen/pelvis followed by a colonoscopy to rule out malignancy is suggested.

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