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Visual diagnosis

Lower abdominal pain in an immunocompromised diabetes mellitus patient

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A 64-year old female patient presented to the emergency department with complaints of acute lower abdominal pain. She had poorly controlled hyperglycemia and multiple cranial glial tumors treated with steroids and radiotherapy.

Her vital signs were body temperature 36.5 °C, blood pressure 110/70 mmHg, and heart rate 90 beats per minute. Her physical examination revealed lower abdominal pain. Her laboratory tests showed blood glucose 259 mg/dL (70–105), leukocytes 16.5 10^3/uL (4.23–9.07), C-Reactive protein (CRP), 8.49 mg/dL (0–0.34). Gram negative bacilli were detected on direct microscopic examination of urine. Contrast-enhanced abdominal tomography is shown in Figs. 1 and 2.

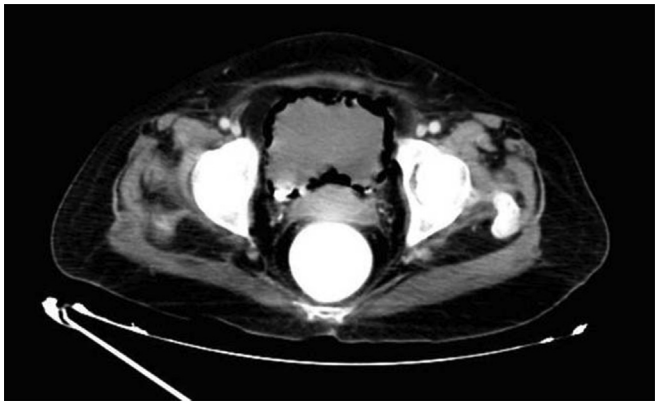

Fig. 1. Contrast-enhanced abdominal tomography showed gas in the bladder wall and an air-fluid level within the lumen of the bladder.

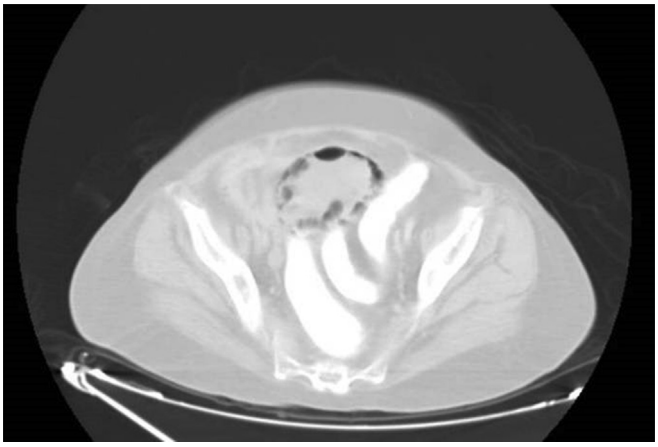

Fig. 2. Contrast-enhanced abdominal tomography showed gas in the bladder wall and an air-fluid level within the lumen of the bladder.

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1. Diagnosis: emphysematous cystitis

Contrast-enhanced abdominal tomography showed gas in the bladder wall and an air-fluid level within the lumen of the bladder (Figs. 1 and 2). The patient did not have any urological instrumentation, including foley or pigtail catheterization, before presentation. After consultation of the urology, infectious disease, and internal medicine departments, the patient was admitted to the observation unit of the ED for intravenous antibiotics and supportive treatment.

Emphysematous cystitis (EC) is a relatively rare infection characterized by accumulation of air within the urinary bladder wall and lumen of the bladder.[1–3] Emphysematous cystitis has a female predominance (female-to-male ratio, 2:1) and tends to be seen in the geriatric population.[1,3] Half of the patients have diabetes mellitus or uncontrolled hyperglycemia.[1,4] Other predisposing factors include malignancy, conditions that cause suppression of the immune system, and steroid treatment.[3]

The clinical presentation of EC is varied; patients can be asymptomatic, or present with an acute abdomen. Of reported patients with EC, 7% were asymptomatic and were diagnosed incidentally on routine abdominal/pelvic imaging for other concurrent illnesses.[2,4] Computed tomography (CT) is the best diagnostic imaging modality. A CT is also useful for excluding fistula or abscess.[2]

Early diagnosis and treatment of EC is important to prevent the progression of infection. Emergency medicine physicians should know the radiological and variable clinical findings of EC.

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