Emphysematous cystitis in a diabetic patient

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Abstract

The rare case of a sailor with uncontrolled diabetes who presented with emphysematous cystitis is reported. Emphysematous cystitis was detected by means of bladder ultrasound and the patient surprisingly remained without fever and in a good general state of health. The causal bacterium was not able to be isolated because the patient had begun early antibiotic treatment and had also undergone conservative surgery.

Key Words: urinary infection, emphysematous, cystitis.

Introduction

Emphysematous cystitis is very rare and manifests as severe bladder infection caused by gas-producing organisms that presents with subtle symptoms despite the seriousness of the infection and is seen in diabetic and immunosuppressed patients.

A Case Report

The patient is a 53-year-old sailor, with high blood pressure, type 2 diabetes, presenting with pain of 3-day duration in the right iliac fossa and hypogastrium. There was macroscopic hematuria, dysuria and bladder voiding difficulty with no history of pneumaturia. He was treated at sea with 2 g ceftriaxone IV per day, 500 mg ciprofloxacin oral b.i.d., 500 mg metronidazole t.i.d. and insulin. He was taken by helicopter to the San José Hospital CIMA in stable condition. Patient was examined in the emergency room and bladder was found to be distended to the umbilicus with no urinary retention. Prostate was small, edematous, soft and painful. Patient’s general condition was good and

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he had no fever. Laboratory work-up reported glycemia 257 mg, creatinine 2.55 mg, leukocytes 13,060 with no bands and normal prostate specific antigen (PSA). HIV and hepatitis B and C tests were normal. Ultrasound study showed the presence of gas inside the bladder mucosa and radiologic diagnosis was emphysematous cystitis. There was no previous history of pneumaturia or gastrointestinal symptoms suggestive of colonic diverticulosis. There were no previous symptoms of urinary obstruction. Patient had important sexual dysfunction due to diabetes mellitus. Initially a urethral catheter was placed to measure diuresis and medical treatment was begun with 250 mg meropenem every 12 hours. Paraphimosis was manually reduced at 48 hours. Colonoscopy was negative for diverticulosis and colon cancer and no enterovesical fistulas were found. Control ultrasound 3 days after admittance showed an abscess in the bladder and pelvis with severe edema in all bladder layers and perivesical fat and intraparietal gas (Image 1). Physical examination revealed edema of the scrotum and lower limbs due to lymphatic compression from a pelvic mass. The patient was taken to the operating room for exploration and under anesthesia a large inflamed mass was palpated in the entire hypogastrum up to the umbilicus and there was no urinary retention. Edema and severe signs of inflammation in the entire thickness of the bladder and perivesical fat were found. There were no enterovesical fistulas or purulent matter (Image 2). Debridement of the inflamed tissue, principally from the bladder mucosa was carried out and bladder biopsies were taken. A suprapubic cystostomy tube was placed and tissues were washed with oxygenated water, iodine and an antibiotic solution consisting of gentamicin and cephalosporins. Penrose drains were left in the perivesical and Retzius spaces. There was postoperative edema and skin cellulitis in the wound and areas of ecchymosis in the abdomen. The patient remained without fever and his general state was good. Urine cultures and aerobic and anaerobic cultures of the inflamed tissue obtained in the operating room were negative and no causal bacterium was isolated. Creatinine decreased to 0.75 mg/dL and serum leukocytes dropped to 9,550. Bladder biopsies reported acute severe emphysematous cystitis (Image 3). There was no surgical wound infection and patient had improved after one week with a reduction in the hypogastric mass and disappearance of edema in the genitals and lower limbs. He was transferred by air to Portugal where progressive improvement in the subsequent days was reported.

**DISCUSSION**

Emphysematous cystitis is a very rare entity characterized by the presence of gas in the bladder mucosa.
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Orlich-Castelán C, et al.

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Emphysematous cystitis is very rare and is diagnosed through imaging studies. Early diagnosis, adequate antibiotic treatment and occasionally surgical treatment are all important for avoiding an elevated mortality rate.

BIBLIOGRAPHY