

A rare cause of acute abdominal pain and gross hematuria: Emphysematous cystitis

Akut karın ağrısı ve gros hematürinin nadir bir nedeni: Amfizematöz sistit

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Abstract

Emphysematous cystitis (EC) is a rare form of complicated urinary tract infection (UTI). Its characteristic feature is the present of gas in the bladder wall and lumen. Immunocompromised patients and diabetes mellitus (DM) are the primary risk factors for the EC and clinical symptoms of EC is range from asymptomatic to severe sepsis. EC is commonly detected in elderly diabetic women and seen in women two times more than in men. Here, we present a patient was diabetic 73-year-old man attempted us with pain and gross hematuria for a few days.

Key Words: Emphysematous cystitis, abdominal pain, hematuria

Özet

Amfizematöz sistit, komplike idar yolu enfeksiyonunun nadir bir formudur. Mesane lümeni içinde ve mesane duvarında gaz birikimi ile karakterizedir. Amfizematöz sistit için başlıca risk faktörleri immünsupresyon ve diabetes mellitustur ve kliniği asemptomatik ile şiddetli sepsis arasında değişmektedir. Amfizematöz sistit genellikle yaşlı diyabetik kadınlarda görülür. Kadınlarda erkeklerden iki kat daha sık görülür. Bu çalışmada birkaç gündür ağrı ve gros hematüri hikayesi olan 73 yaşında diyabetik nadir görülen olguyu sunduk.

Anahtar Kelimeler: Amfizematöz sistit, karın ağrısı, hematüri

Introduction

Emphysematous cystitis (EC), a rare form of complicated urinary tract infections, is characterized by the present of gas in bladder wall and bladder lumen (1). EC is commonly observed in elderly women with diabetic (1,2,3). It is seen women two times more than in men. (4). Computed tomography is needed for obtaining a definitive diagnosis of EC. The most of patients with EC can be treated with antibiotics, bladder drainage. We report the a case of EC in patient with diabetic.

Case Presentation

An 73-year-old male with diabetes was attempted to our department with lower abdominal pain and hematuria for a few days. The family reported that the patient

has disuri, lower abdominal pain and hematuria for a few days. His medical history included hypertension, poorly controlled type 2 diabetes mellitus for 10 years. The patient was conscious, oriented, afebrile and normotensive. There was only lower abdominal pain in abdominal examination. Biochemistry tests showed poor glycemic control (HbA1c: 10.9 mg/dL; direct bilirubin: 0.4 mg/dL; SGOT: 12 U/L; SGPT: 15 U/L; GGT: 12 U/L; alkaline phosphatase: 103 U/L) and normal renal function (creatinine: 0.8 mg/dL). The complete blood count was normal (white cell count: 13,300/mm³ with 84.8% neutrophils; hemoglobin: 13.3 g/dL; platelets: 189,000/mm³). Routine urine analysis demonstrated the presence of lycosituria and microhematuria and nitrate was negative. Sediment

was clearly pathological, showing abundant white cells and germs.

Abdominal computed tomography (CT) showed the presence of linear air in bladder wall. EC was diagnosed on the basis of radiological characteristics (Figure 1). So patient underwent cystoscopy. Cystoscopy confirmed diffuse submucosal amphysema. His abdominal pain resolved after the patient was treated with a 10 day course of broad spectrum antibiotic and bladder catheterization. The bacterial culture of urines remained negative. Repeat abdominal CT showed resolution of diffuse bladder air.

Discussion

Emphysematous cystitis (EC) is a rare clinical situation, it is seen mainly in the elderly persons with diabetes mellitus. It is seen in women double times more than in men. DM is the most predisposing factor. (5). Other factors include the presens of chronic retention, immunosuppression. Besides, diabetes mellitus (type I, 42,4%, and type II 57,6%) were detected in 66,7% of the cases. Together with these factors, glucosuria, leucocytic dysfunction, and patients with diabetes mellitus are more prone to develop lower urinary tract infections (6). Anaerobic bacteria and fungi are among the factors, *Escherichia coli* is the most common microorganism for this table (7,8).

The mechanism of gas formation in emphysematous cystitis has not been fully resolved. The accepted mechanism is accumulation of hydrogen, and carbon dioxide as a result of fermentation produced by infective organisms in the tissues. Glucose and lactose in diabetic patients, albumin and lactose in non-diabetic patients accumulates in urine and tissues have been thought to be the building blocks of gas production (9). Our case was a diabetic elderly woman.

Abdominal pain is the most common complaint. The peritoneal signs in patient with EC are rare. Pneumaturia can be rarely detected in patients and this finding can help to diagnose (10,11).

The diagnosis of EC is confirmed with radiology. A plain abdominal X-ray may be useful, showing a radio-lucent curvilinear area delineating the urinary bladder wall, with or without intraluminal air. Ultrasound shows bladder wall thickening with marked echogenicity, but its diagnostic sensitivity is low. The diagnosis and assess-



Figure 1. Abdominal computed tomography (CT) showed the presence of linear air in bladder wall.

ment of the extent of the lesion is confirmed by a CT scan (12,13). CT; Crohn's disease is important in the differential diagnosis such as conditions rektovezikal fistula and emphysematous pyelonephritis (11,14). Definitive diagnosis were withdrawn with CT in our case.

The mortality rate of EC is about 7% (10). These cases response very well to bladder catheterization and broad-spectrum antibiotics treatment (15). In intense cases or unresponsive to conservative treatment, surgical treatment may be needed such as partial cystectomy, cystectomy or debridement (10). In our case, we also began conservative treatment is appropriate to the literature, finally we had good response to the treatment.

Conclusion

As a result, physicians should be aware of subtle symptoms including abdominal pain and hematuria. These symptoms may be clinical signs of EC. Early detection and therapy can contribute to achieve favorable prognosis. Because EC is a potential life-threatening condition.

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