Images in Nephrology
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Giant emphysematous cystitis in a patient with diabetic uraemia

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A 51-year-old woman with a history of diabetic uraemia under chronic haemodialysis presented with progressive low abdominal pain and dysuria for more than 1 week. She also had a low-grade fever with hypotension, and rapidly progressed to septic shock. Physical examination showed marked tenderness in the suprapubic area. Laboratory examination revealed that the white blood cell (WBC) count was 23 000 per cubic millimetre with segmented neutrophils 88% and band cells 10%. The urinalysis examination showed pyuria with 40 white cells per high-power field. A plain abdominal radiograph showed severe distended urinary bladder with diffuse cystic collections of gas within the urinary bladder wall (Figure 1A, arrows), and an abdominal computed tomographic scan helped confirm the diagnosis of emphysematous cystitis by curvilinear pockets of gas within the urinary bladder wall (Figure 1B, arrow). A urine culture of *Escherichia coli* was isolated. The patient was treated with broad-spectrum antibiotics and bladder drainage. Despite intensive care, she died due to multiple organ failure 5 days later.

Emphysematous cystitis is a rare disease characterized by gas-forming organism infection with gas collections inside the urinary bladder wall. The predisposing risk factors are diabetes mellitus (>50%), recurrent urinary tract infections, neurogenic bladder and immunocompromised state, and female sex [1]. The most common causative organisms are *E.coli*, but other organisms including *Enterobacter aerogenes* and other fungal species are also reported. Clinical presentations are usually non-specific including dysuria, increased urinary frequency, pyuria and haematuria. The radiological assessment by an abdominal computed tomographic scan can clearly demonstrate curvilinear pockets of gas within the urinary bladder wall with high sensitivity and specific diagnostic rate [2]. Early diagnosis with aggressive broad-spectrum antibiotic therapy can lead to have favourable prognosis, whereas delay in diagnosis and treatment may lead to developing an overwhelming septic shock with high mortality rate.

Conflict of interest statement. None declared.

References


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Fig. 1. Plain abdominal radiograph showing severe distended urinary bladder with diffuse cystic collections of gas within the urinary bladder wall (A, arrows), and an abdominal computed tomographic scan helped confirm the diagnosis of emphysematous cystitis by curvilinear pockets of gas within the urinary bladder wall (B, arrow).