

Unusual association of emphysematous cystitis and chronic alcoholism

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DESCRIPTION

A Caucasian woman aged 65 years with a history of chronic alcoholism presented to the hospital with confusion. Abdominal examination revealed lower abdominal tenderness with no guarding or rigidity. Ethanol level was 378 mg/dL (<10 mg/dL: absent; >300 mg/dL: potentially fatal level) and blood counts in low normal range. Lactic acid was elevated to 3.6 mmol/L and urinalysis revealed pyuria, haematuria, 4+ bacteria and positive leucocyte esterase. CT scan of the abdomen showed air within the bladder wall without urinary calculus or obstruction (figures 1 and 2). Patient's mental status improved with intravenous hydration and ertapenem. Urine culture showed heavy growth of levofloxacin-sensitive *Escherichia coli* and the antibiotic was narrowed down. Abdominal ultrasound scan performed after 14 days showed resolution of free air in bladder walls.

Emphysematous urinary tract infection is characterised by air within the lumen and walls of the urinary tract.^{1 2} *Escherichia coli* and Klebsiella infections in patients with diabetes, old age, urinary catheter insertion and immunosuppression may lead to emphysematous cystitis. Abdominal pain, fever, haematuria and pyuria are the common presenting symptoms. Delayed treatment can result



Figure 2 Axial CT image of the abdomen of the same patient showing free air in bladder walls.

in complications like fistula, bladder rupture, sepsis and even death. Diagnostic modality of choice is CT of the abdomen, and is advised to be used in patients with high suspicion for the condition to minimise complications. Our patient possibly had immunosuppression from alcohol use which has been well documented in the literature.³ The classical risk factors like diabetes, anatomical abnormality on imaging or any recent gynaecological/urological procedures were absent. Acute and chronic alcoholism can mask the signs and symptoms of infection by its dose-dependent negative effect on adaptive and innate immunity.⁴ Its effect on leucocytes manifests with low cell counts as well as decreased function leading to impaired cytokine production.⁵

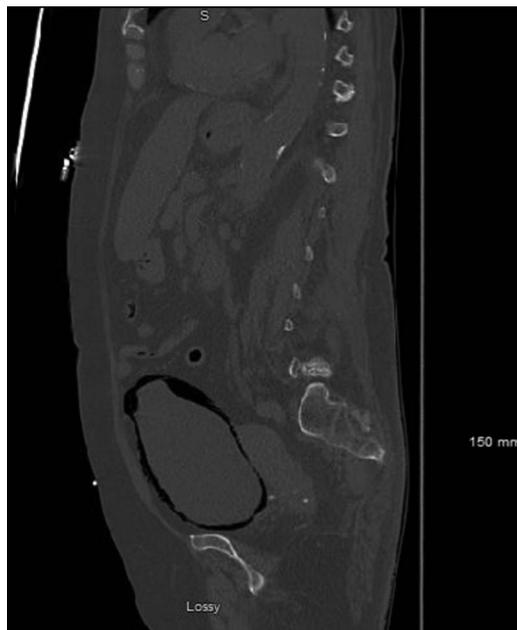


Figure 1 Sagittal CT image of the abdomen showing free air in bladder walls diagnosed as emphysematous cystitis.

Learning points

- ▶ Elderly, diabetic and immunosuppressed patients and those with recent urinary catheter insertion or urological procedures are at high risk of developing emphysematous cystitis.
- ▶ Early diagnosis with CT abdomen and treatment can prevent complications like fistula, bladder rupture or extension of infection.
- ▶ Alcohol can mask the common signs and symptoms of infection as well as affect the inflammatory markers and chronic alcoholics should be considered at high risk of life-threatening infections due to immunosuppression and appropriate antimicrobials should be instituted promptly.



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Contributors AJ is responsible for planning, preparation of manuscript including conception, review of literature and submission. SSA is responsible for patient care, initial planning, reporting, acquisition of clinical history and review of literature. IV is responsible for patient care, planning and conception of the case report, and acquisition of images. DB is responsible for patient care, supervision of the planning and preparation of manuscript, reviewing the report and editing.

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