



Emphysematous cystitis an unusual case of urinary tract infection in long standing rheumatoid arthritis: A case report

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General Note

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ABSTRACT

Emphysematous Cystitis is a rare condition with presence of air within the urinary bladder wall and lumen which commonly presents with vague symptoms ranging from asymptomatic to sepsis. We report an elderly female, known case of rheumatoid arthritis on methotrexate admitted with complaints of pain in lower abdomen, later came out to be urinary tract infection due to acute emphysematous cystitis diagnosed on CECT abdomen.

Keywords: Emphysematous cystitis, rheumatoid arthritis, urinary tract infection.

1. INTRODUCTION

Emphysematous cystitis is a rare urinary tract infection associated with presence of air within bladder wall and lumen (Mokabberi & Ravakhah, 2007). It is a rare emergency complications caused by gas-forming organisms, which may be progressive and occasionally fatal requiring urgent treatment. Few case of emphysematous pyelonephritis or abscess has been reported in literature. It is usually common in patients with diabetes mellitus, urethral catheters and urinary tract obstruction (Toyota et al., 2011). Patient might have varied presentation ranging from incidental finding to sepsis.

Emphysematous cystitis presenting with rheumatoid arthritis is an unusual presentation, not a single case has been reported. Here we present a case of 82 year elderly female known case of long standing rheumatoid arthritis presenting with emphysematous cystitis due to eschericia coli.

2. CASE PRESENTATION

An 82-year-old Indian woman was referred by her general practitioner to our emergency department due to high grade fever, pain abdomen and vomiting with agitation. She had a medical history of rheumatoid arthritis and was taking prednisolone and methotrexate for the same. She denied any history of hypertension, diabetes mellitus, ischemic heart disease and chronic lung disease. Her general physical examination revealed confusion, dehydration, abdominal distension and tenderness in the left iliac region. Respiratory and neurological examinations were within normal limits. Local examination showed changes of rheumatoid arthritis such as Boutonniere deformity of thumb, swan neck deformity of fingers and ulnar deviation of metacarpal joint (Figure 1).



Figure 1 Showing changes of rheumatoid arthritis such as Boutonniere deformity of thumb, swan neck deformity of fingers and ulnar deviation of metacarpal joint

Blood analysis revealed total leucocyte count 17200/cu.mm with neutrophilic predominance 93.3%, haemoglobin 9 gm%, Mean Corpuscular Volume 89 cub micron, Platelet count 2.68 lacs/cu mm. Her electrolyte panel revealed a low sodium level 115.9 mg/dl, potassium: 3.4 mmol/lit, urea: 36 mg/l, creatinine 1.4 mg/dl. Urine analysis was normal. In view of pain in lower abdomen, abdominal ultrasound was done which was suggestive of minimal thickening and increased echogenicity of mesenteric fat noted in left iliac fossa. A contrast enhanced CT scan of the abdomen was performed which showed a thickened urinary bladder with intramural air density most likely to be emphysematous cystitis (Figure 2).

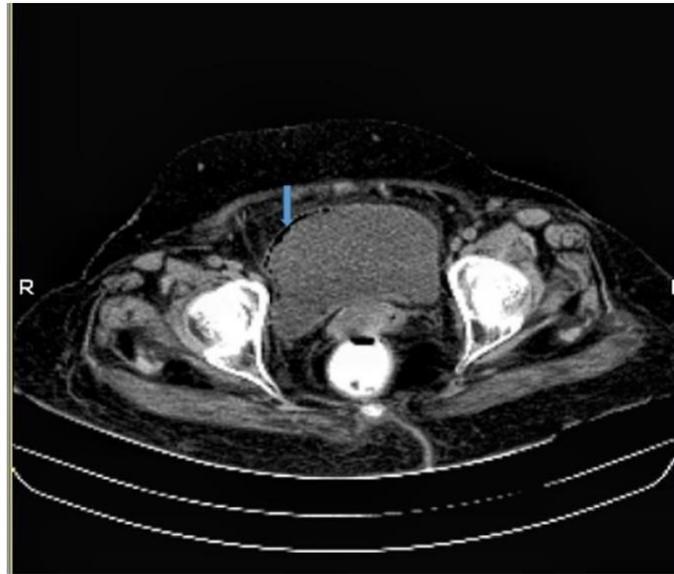


Figure 2 Showing thickened urinary bladder with intramural air density

After catheterization, air bubbles in the catheter were observed. Serial repeats of blood counts showed decreasing leucocyte counts. Hypertonic saline was given to correct sodium deficit following which patient's clinical orientation improved. Her Urine culture report showed growth of *E. coli* species, which were sensitive to Nitrofurantoin and Amikacin, accordingly treatment started. Following treatment, patient was relieved of symptoms, no complaint of abdominal pain, on physical examination there was no tenderness in left iliac fossa. Non contrast imaging of the bladder was repeated after 7 days of antibiotic therapy which the bladder outline was normal in outline with no presence of intraluminal air densities (Figure 3).



Figure 3 showing normal bladder outline with no presence of intraluminal or intramural air densities

3. DISCUSSION

Emphysematous Cystitis is a rare condition which can be fatal if not treated (Dhingra, 2008). It presents similar to uncomplicated cystitis, characterized by dysuria, hematuria, abdominal pain with urinary urgency and frequency and a unique pathological exception- pneumaturia (Dhingra, 2008). This presentation of this condition varies, ranging from an incidental diagnosis in asymptomatic patients during an abdominal imaging to severe sepsis (Thomas et al., 2007; Grupper et al., 2007). The incidence and

prevalence of emphysematous cystitis is unknown. Patients with obstructive uropathy, immunodeficiency, neurogenic bladder and recurrent UTIs are at high risk. Emphysematous cystitis may have an atypical presentation and sometimes the degree of inflammation is not related to the symptoms. As it is most common in patient with diabetes, the treating doctor must be alert to the signs of potentially fatal infections. In our case, patient did not have diabetes which is uncommon.

The diagnosis of emphysematous patients requires radiographic imaging which would show a radiolucency which outlines the wall of the bladder with or without luminal gas. Ultrasound has poor sensitivity but can be useful for monitoring patients for follow up clinical improvement. A CT scan is required for definitive diagnosis which also distinguishes it from other causes (Thomas et al., 2007). About 60-70% of cases are caused by *E. coli* species, as seen in emphysematous pyelonephritis. The rest may be associated with *Klebsiella pneumoniae*, *Clostridium*, *Enterobacter*, *Staphylococcus aureus* or *Proteus mirabilis* (Dhingra, 2008; Sadek, 2011; Kumar et al., 2013). The detection of aetiology requires both aerobic and anaerobic cultures.

Antibiotics, preferably given intravenous, such as penicillin with beta-lactamase inhibitors, fluoro quinolones and third generation cephalosporins are used as preferred treatments. In cases involving a fungal infection, an antifungal may be added. In our patient, the agent was *E. coli*, susceptible to Nitrofurantoin and Amikacin. Surgical intervention such as partial cystectomy and debridement may be needed in patients who respond poorly to antibiotics or have necrotizing tissue (Shigemura et al., 2009). Complications include septicaemia leading to septic shock, bladder rupture, peritonitis and death may occur in cases where diagnosis is delayed.

4. CONCLUSION

This case report shows emphysematous cystitis presenting in case of rheumatoid arthritis. Computed tomography helps in determining severity and extent of emphysematous cystitis. An early diagnosis will help in initiating medical or surgical intervention and decreasing mortality.

Informed Consent

Patients inform consent was taken and signed by Patient before writing case report.

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Conflict of interest

The author declares that he has no conflict of interest.

Data and materials availability

All data associated with this study are present in the paper.

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