

Emphysematous Cystitis - A rare cause for urosepsis

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Abbreviations: AMH: Austin Moore Hemiarthroplasty; EC: Escherichia Coli; CT: Computed Tomography; EC: Emphysematous cystitis; IV: Intravenous.

Clinical Image Description

An 89 year old female with diabetes mellitus, dyslipidemia, hypertension and ischemic heart disease admitted to orthopedic department following intra-capsular neck of femur fracture. While awaiting Austin Moore Hemiarthroplasty (AMH), she developed lower abdominal pain, fever, features of acute cystitis, hematuria and pneumaturia. Her urine culture was positive for Escherichia coli (E. coli) and blood culture for gram negative bacilli. Further evaluation with abdominal X-ray (Figure 1) and computed tomography (CT) (Figure 2) showed evidence of emphysematous cystitis (EC). Her urosepsis was treated with intravenous (IV) Meropenem 500mg eight hourly for 14 days. She recovered from sepsis and subsequently underwent AMH.

EC is a rare necrotizing infection of the urinary bladder [1]. Presence of intramural and intraluminal air is pathognomonic for the condition. It is most common in elderly females with multiple comorbidities. Their clinical presentation can vary from asymptomatic to life-threatening severe sepsis. As in this case, E. coli is the main uro-pathogen found in 60-70% of patients [2].

Imaging is essential for the definitive diagnosis as hematological and biochemical investigations are non-diagnostic. Plain abdominal X-ray is highly sensitive (97.4%) and diagnostic in majority (80%) of patients [2]. Intramural air in X-ray delineate the bladder wall giving it the characteristic beaded neck lace configuration (Figure 1). Air-fluid level in X-ray indicates the presence of intraluminal air. Gold standard imaging modality to confirm EC is CT (Figure 2). It helps to determine the severity while differentiating EC from pelvic gas due to other causes [1].

Immediate treatment with extended spectrum IV antibiotics, bladder drainage and tight control of other comorbidities will reduce the mortality in 90% of patients [2]. Others require surgical therapy in the form of partial or total cystectomy [3].



Figure 1: Plain abdominal X-ray demonstrating intramural air (white arrows) with characteristic beaded neck lace appearance.

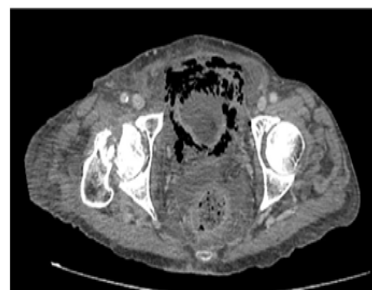


Figure 2: Axial CT image demonstrating intramural and extraperitoneal pelvic air (white arrows).

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Declarations

Author contribution statement: All authors participated in the treatment of this case, and the first author drafted the manuscript. All authors read and approved the final manuscript.

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