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Angioembolisation for Emphysematous Cystitis Presenting as Gross Haematuria: A Case Report

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***Abstract*— *Introduction**: Emphysematous cystitis is a rare infectious condition of the urinary bladder and carries significant morbidity and mortality especially if diagnosed late**. Case history**: We report a case of emphysematous cystitis with the unusual presentation of gross haematuria. A 76 years old diabetic lady presented to the Emergency Department with gross haematuria and falling haematocrit. CT angiography of the KUB region revealed ongoing bleed from the right vesical arteries with bladder intramural gas suggesting emphysematous cystitis. Angioembolisation of the bleeders followed by cystoscopic clot evacuation and bladder irrigation was done and adequate antibiotic therapy was started following which patient became better and was finally discharged in a stable condition. **Discussion**: We recommend CT for definitive diagnosis for emphysematous cystitis. High level of clinical suspicion, early antibiotic therapy, good glycemic control and bladder irrigation are needed for good management of the condition and prevention of complications.*

***Keywords*—** *Angioembolisation; cystitis; emphysematous; vesical artery.*

I. INTRODUCTION

Emphysematous cystitis is a form of complicated urinary tract infection characterised by presence of gas in the wall and/or lumen of the urinary bladder. The condition is seen mainly in elderly diabetics and people with immunosuppression. It carries significant morbidity and mortality

II. CASE HISTORY

A 76 years old diabetic lady presented to the Emergency Department with gross haematuria for 2 days which was accompanied by mild dysuria and lower abdominal discomfort. She was otherwise afebrile and vitally stable. Her physical examination was unremarkable except for mild tenderness in the lower abdomen. Initial blood investigations showed low haematocrit (haemoglobin of 5.2 gm/dL), mild leucocytosis (WBC count of 14000/mm^3), elevated CRP (22 mg/dL). A Foley's catheter was inserted into the lumen of urinary bladder.

Computed tomography (CT) angiography of the abdomen was done which showed prominent vascularity along the anterior wall of urinary bladder with subtle contrast extravasation and underlying mural irregularity and intramural air foci along with large clot in the bladder lumen. There was perivesical fat stranding. A diagnosis of emphysematous cystitis was made based on the clinical picture and CT scan findings (Figure 1).

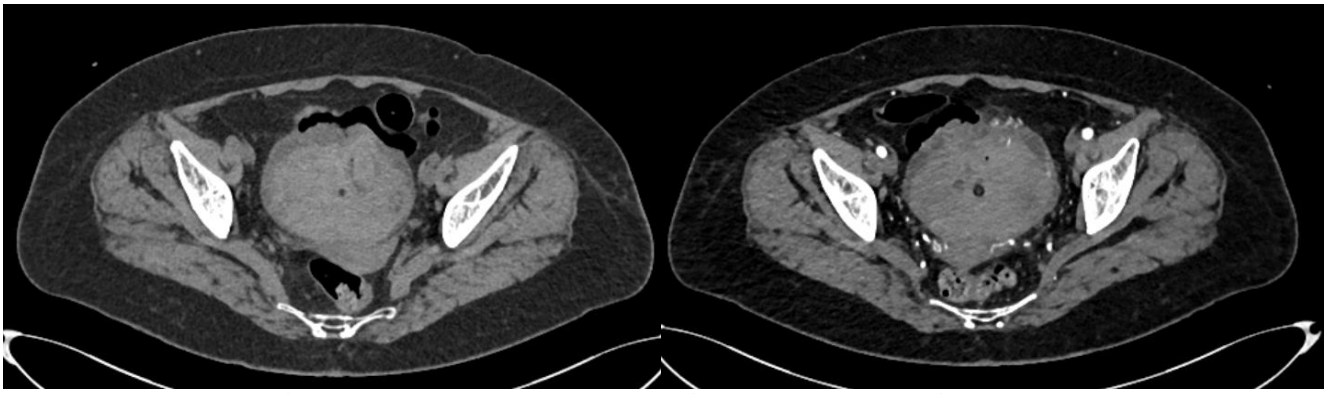

Fig. 1. Computed tomography of the abdomen shows mural irregularity and air foci along the anterior wall of urinary bladder with prominent vascularity.

Patient was put on empirical antibiotics (Injection Piperacillin-Tazobactam 4.5 gm IV TDS). She received 2 units of packed RBCs and IV fluids. In view of the haematuria, angioembolisation of the bleeders was planned. Catheter angiography showed bleeding from the right inferior vesical artery and it was embolised (Figure 2).

Cystoscopy was then performed which showed an ulcerated patch along the anterior wall of urinary bladder without any obvious soft tissue mass lesion followed by biopsy from the ulcer edge, clot evacuation and bladder irrigation. Meanwhile patient continued to receive best medical therapy. Urine culture grew E. Coli and antibiotics

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were modified as per sensitivity report. The biopsy report suggested chronic cystitis (Figure 3).

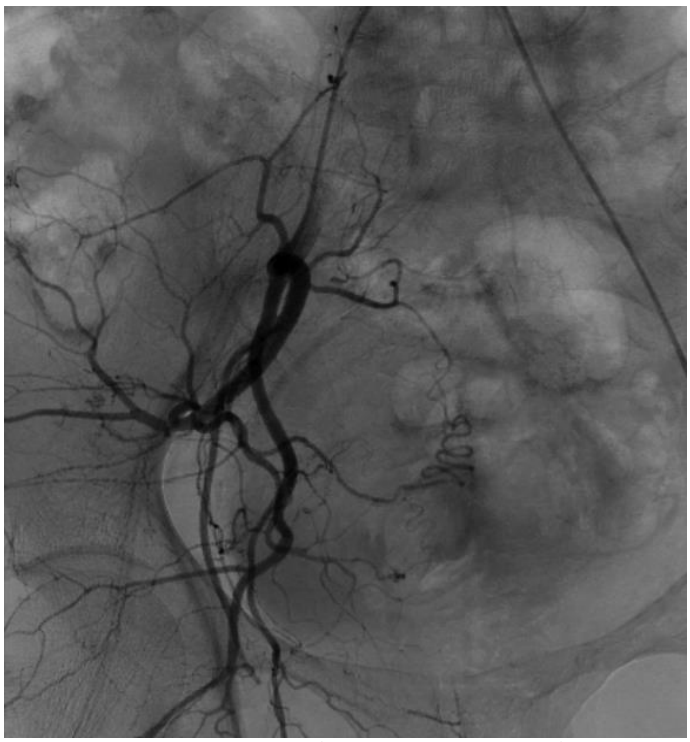

Fig. 2. Catheter angiography shows focal contrast extravasation from the right inferior vesical artery.

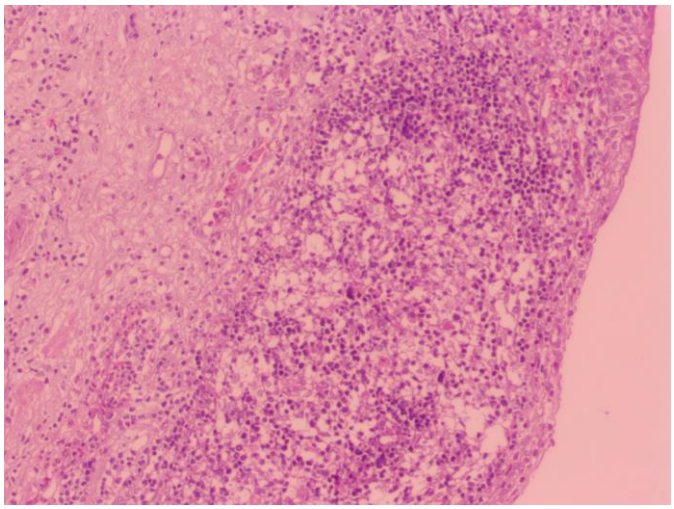

Fig. 3. Section shows dense lymphocytic infiltrate along with lymphoid follicle formation in the lamina propria due to chronic cystitis.

Patient eventually made an uneventful recovery and was discharged in a clinically stable condition after 8 days of hospital stay.

III. DISCUSSION

Emphysematous cystitis is an uncommon infectious condition of the urinary bladder characterised by presence of gas in the wall and/or lumen of urinary bladder. Majority of the patients have underlying diabetes mellitus and other important risk factors are bladder outlet obstruction, neurogenic bladder and immunosuppression [1,2]. Early diagnosis of the condition is important to prevent morbidity and mortality. Clinical presentation is often variable and gross haematuria is relatively infrequent [1]. Diagnosis hinges on urinalysis and abdominal X-ray/Computed tomography. Escherichia coli and Klebsiella pneumoniae are often isolated from urine cultures [3]. Characteristic radiographic appearance is a curvilinear lucency surrounding the urinary bladder wall separate from the rectal gas shadow [4,5]. Computed tomography is more sensitive clearly depicting urinary bladder wall and/or luminal gas along with wall thickening [4,5]. Majority of patients respond to medical management comprising of antibiotics, bladder irrigation and treatment of predisposing conditions [3]. Transcatheter arterial embolization is occasionally indicated in these patients if there is gross haematuria. Embolization is a minimally invasive and safe procedure and provides immediate and sustained control of life-threatening haematuria [6].

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