

Clinical Image

Open Access, Volume 3

Emphysematous cystitis in a renal transplant recipient

Emilie Devars¹; Sylvain Guinebert^{1,2}; Olivier Henon^{1,2}; Sylvain Bodard^{1,2,3*}

¹AP-HP, Hôpital Necker Enfants Malades, Service d'Imagerie Adulte, F-75015, Paris, France.

²Université de Paris, F-75006, Paris, France.

³Sorbonne Université, CNRS, INSERM Laboratoire d'Imagerie Biomédicale, Paris, France.

*Corresponding Author: Sylvain Bodard

Adult Department of Radiology, Necker Hospital,
149 Rue de Sèvres, 75015, Paris, France.

Email: Sylvain.bodard@aphp.fr

Abstract

Emphysematous cystitis is a rare entity characterized by gas inside the bladder and in its wall on CT, the gold standard to establish the diagnosis. Few renal transplant recipients have reported few cases, and none of them had associated diabetes over the last ten years. We report the case of a 64-year-old female who had a history of type 2 diabetes mellitus and who presented emphysematous cystitis nine years after her kidney transplant for chronic interstitial nephropathy.

Abbreviations: CBEU: cytobacteriological examination of urine.; CT: Computed Tomography; CECT: Contrast-enhanced computed tomography; CBEU: Cytobacteriological examination of urine

Received: Feb 01, 2022

Accepted: Feb 25, 2022

Published: Mar 04, 2022

Archived: www.jcimcr.org

Copyright: © Bodard S(2022).

DOI: www.doi.org/10.52768/2766-7820/1712

Description

We report the case of a 64-year-old female who presented two episodes of low-grade hematuria nine years after her kidney transplant for chronic interstitial nephropathy. She had a history of type 2 diabetes mellitus, T-cell lymphoma, and several episodes of transplant *Escherichia coli* pyelonephritis. She was taking ciclosporin and prednisone as a medication. On examination, she had no fever, no pneumaturia or gross hematuria, no functional urinary signs, no abdominal or lumbar pain. Biology revealed acute renal failure (creatinine=105 µmol/L versus 43 µmol/L), C-Reactive Protein (CRP) level of 9 mg/dl, leuko-neutropenia, and non-regenerative normocytic anemia. Doppler Ultrasound of the renal graft did not reveal any urological or vascular complication. Abdominopelvic computed tomography (CT) revealed emphysematous cystitis responsible for bladder wall thickening with extensive intramural gas and no intraluminal gas accumulation (Figures 1 & 2), diffusing in the posterior wall of the urethra (Figure 3) and without any extravescical extension. The cytobacteriological examination of urine confirmed an *E. coli* infection without microhematuria. Treat-

ment with Ceftriaxone 1g daily was started for 14 days, and a urinary catheter was inserted. A follow-up CT scan showed complete regression of the emphysema one week later

Emphysematous cystitis is a rare entity characterized by gas inside the bladder and in its wall on CT, the gold standard to establish the diagnosis [1]. Patients are most often women over 60 years [1]. Poorly controlled diabetes [1,3], immunosuppression, and urinary stasis [1] are well-known risk factors.

Few cases of emphysematous cystitis in renal transplant recipients have been reported [2], and none of them had associated diabetes over the last ten years. Treatment consists of antibiotic therapy, bladder drainage, control of diabetes, and in some cases, surgical management, whether the patient is transplanted or not [2,4]



Figure 1: Transverse CECT (early arterial phase) shows intramural gas within the thickened bladder wall (arrows) without intraluminal gas accumulation.

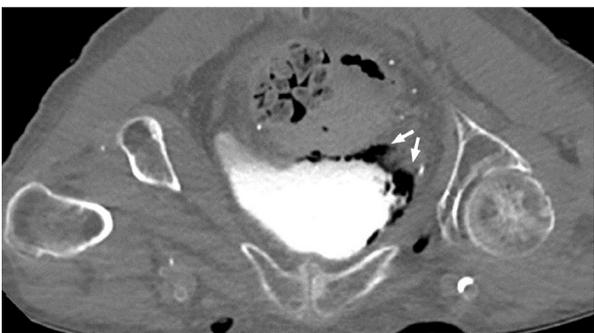


Figure 2: Transverse procubitus delayed CECT (excretory phase) shows gas in the bladder wall (arrows) without air-fluid level formation.

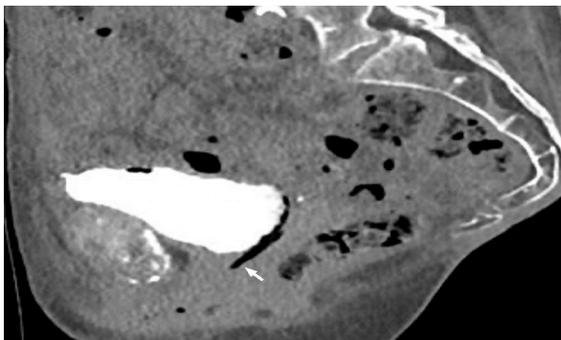


Figure 3: Sagittal procubitus reconstruction, delayed CECT (excretory phase) demonstrates gas diffusing along the posterior wall of the urethra (arrow)

Conflict of interest declaration: none

References

1. Mohamed Mongi Bacha, Ikram Mami, Hane`ne Gaied, Mondher Ounissi, Hafedh Hedri, Ezzeddine Abderrahim, Tai`eb Ben Abdallah, Emphysematous pyelonephritis and cystitis: An exceptional complication in a kidney transplant recipient, doi.10. 1016. nephro.2021.02.003
2. Erich K. Lang, Ernest Rudman, Karl Zhang, Daniel Thorner, Amer Hanano, Department Radiology and Urology, SUNY Downstate Medical School, Brooklyn, New York, NY, USA, Myceleal Emphysematous Cystitis Complicating a Renal Transplant Kidney, 10.1590/S1677-55382011000200014
3. Saudi J Kidney Dis Transpl 2019;30(3):706-709 © 2019 Saudi Center for Organ Transplantation, Gas in the Kidney in Asymptomatic Escherichia coli Urinary Tract Infections in a Patient with Severe Vesicoureteral Reflex, 30(3):706-709
4. Erich K. Lang, Karl Zhang, Daniel Thorner, Quan D. Nguyen Emphysematous Cystitis as Complication in Chronic Rejection of Renal Transplant, doi: 10.1590/S1677-55382010000700015