

Case Report**INTRAPERITONEALLY PLACED FOLEY'S CATHETER SECONDARY TO IATROGENIC BLADDER PERFORATION: A CASE REPORT****Onwuasoanya UE^{1*}**¹Department of Urology, Lily hospitals Limited, Warri, Delta State, Nigeria.

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Abstract

Background: Urethral catheterisation is one of the commonest procedures performed by health care professionals worldwide and has several indications. Although this procedure is simple, it can lead to several complications some of which can be life threatening such as bladder perforation leading to peritonitis.

Case Presentation: We report the management of a 63-year-old male who presented to Lily Hospitals Limited, Warri, Delta State, Nigeria with complaints of bilateral flank pains following urethral catheterisation. Evaluation of the patient revealed intraperitoneal fluid collection and he had exploratory laparotomy with findings of foley's catheter in the peritoneal cavity and bladder perforation. He subsequently had bladder repair and urethral catheterization with resolution of the flank pains after the procedure.

Conclusion: Bladder perforation is a rare complication of urethral catheterisation and can lead to life threatening peritonitis. Urgent exploratory laparotomy is pertinent to prevent mortality.

Keywords: Bladder, Perforation, Catheterisation

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INTRODUCTION

Urethral catheterisation is one of the most commonly performed procedures in health care settings worldwide, with more than 5 million urethral catheterisations done in the United States in the year 2000 alone.¹ The two most common complications related to foley's catheters, particularly in males, are anterior urethral injuries which can lead to long term sequelae, such as urethral strictures, and retention of the catheter balloon in the urethra.² Bladder perforation following urethral catheterisation is a rare complication and can be life threatening,³ so when it occurs it is a surgical emergency that needs urgent surgical intervention to prevent mortality.

CASE PRESENTATION

A 63-year-old male who presented to the emergency unit of Lily Hospitals Limited, Warri, Delta State, Nigeria with complaints of bilateral flank pains of 1 day duration which developed following passage of urethral catheter a

day prior to onset of symptoms. The pain was said to be dull aching, does not radiate to any part of the body, not worse at any time of the day with no known aggravating or relieving factors. There was an associated history of anorexia, vomiting but no associated fever, abdominal distension, diarrhoea or haematuria.

He has been on management for chronic kidney disease and recurrent urinary tract infection. He had open left nephrolithotomy in 2018 and left double J stent removal in 2020. There was no positive history of hypertension, diabetes or drug allergy. There was no family history of kidney diseases, hypertension or diabetes.

Physical examination revealed a patient in painful distress, pale, bilateral flank and epigastric tenderness with foley's catheter draining amber coloured urine. Investigations done revealed- Serum electrolytes, urea and creatinine revealing deranged values for potassium of

6.3mmol/L (3.5-5.3mmol/l) urea of 117mg/dl (5-20mg/dl) and creatinine of 8.5mg/dl (0.5-1.5mg/dl). Urinalysis showed protein of two pluses and leukocytes of two pluses. Urine microscopy, culture and sensitivity revealed growth of klebsiella sensitive to levofloxacin, gentamycin, azithromycin. Full blood count revealed haemoglobin of 9.5g/dL (11.5-16.5g/dl) and white blood count of $15,800 \times 10^9/l$ ($4-11 \times 10^9/l$). Abdominopelvic ultrasound scan revealed fluid collection at both paracolic gutters. Peritoneal aspiration of the fluid under ultrasound guidance revealed amber coloured fluid, laboratory assessment of the creatinine content of the peritoneal fluid revealed a value of 93.5mg/dl which was far higher than the blood level. A diagnosis of intraperitoneal fluid collection was made and he was worked up for exploratory laparotomy to determine the cause of the collection.

He was transfused with two units of packed cells, placed on parenteral levofloxacin and had a session of haemodialysis. Post dialysis serum electrolytes, urea and creatinine revealed potassium of 4.4mmol/l (3.5-5.3mmol/l), urea of 62mg/dl (5-20mg/dl) and creatinine of 3.6mg/dl (0.5-1.5mg/dl). He subsequently had exploratory laparotomy with findings of urine collections at both paracolic gutters measuring 270 millilitres, foley's catheter balloon within the peritoneal cavity with the catheter passing through a posterior bladder wall perforation measuring about 1 centimetre in length (**Figure 1**). The urine collection was drained, bladder perforation was repaired in two layers followed by urethral catheterisation, then the peritoneal cavity was copiously lavaged with normal saline and drains were placed at the right paracolic gutter and perivesical regions. He had two units of blood transfused post operatively, the serum electrolytes, urea and creatinine done after surgery was better than the result gotten before the surgery. There was complete resolution of the flank pains and the patient was discharged home seven days after surgery with the urethral catheter. Urethral catheter was removed a week after discharge.



Figure 1: Foley's catheter within the peritoneal cavity

DISCUSSION

Complications associated with indwelling urethral catheter include bladder stones, urinary tract infections, bleeding and iatrogenic hypospadias.⁴ Among these complications, bladder perforation is rare but can be life threatening, similar to other traumatic and iatrogenic injuries.³ Although the complication of bladder perforation following urethral catheterisation is rare, several authors have reported serious complications following urethral catheterisation such as bladder perforation and rectovesical fistula.⁵⁻⁷ Radiation injury, bladder tumours, urinary tract infections, catheter obstruction and long term catheterisation can damage the bladder and decrease bladder compliance.⁸ Our patient had recurrent urinary tract infection which we believe decreased the bladder wall compliance thus promoting the occurrence of bladder perforation following urethral catheterisation.

Intraperitoneal perforation of the urinary bladder typically manifests with abdominal pain with guarding due to peritonitis.⁹ Our patient presented with bilateral flank pains but did not develop peritonitis as there was no generalized abdominal tenderness with guarding and the vital signs were stable throughout the period of management. Studies from the literature did not reveal similar findings. We believe peritonitis did not develop in

the patient because most of the urine that leaked into the peritoneal cavity was drained by the urethral catheter that was placed in the peritoneal cavity.

We encountered difficulty making the diagnosis of bladder perforation as the diagnosis was made intraoperatively. This was due to the fact that the presentation was vague thus making the diagnosis difficult, similar to what was reported by Galbraith et al.¹⁰

Bladder perforation requires immediate surgical treatment because it can lead to life threatening urinary ascites and peritonitis.⁹ Our patient had urgent exploratory laparotomy with bladder repair after optimization for surgery. He is currently on follow up visits and was satisfied with the treatment he received.

CONCLUSION

Bladder perforation is a rare complication of urethral catheterisation and can lead to life threatening peritonitis. Diagnosis is often difficult as the presentation is vague. Urgent exploratory laparotomy with bladder repair is pertinent to prevent mortality.

COMPETING INTERESTS

There are no competing interests.

CONSENT FOR PUBLICATION

A written consent to publish images and clinical details was obtained from the patient.

ETHICAL APPROVAL

Not applicable.

REFERENCES

1. Maki DG, Tambyah PA. Engineering out the risk for infection with urinary catheters. *Emerg Infect Dis.* 2001;7(2):342-347.
2. St Luce S, Ninan AC, Hall JA, Kimberl IJ, Petros JA, Issa MM. Role of transrectal ultrasonography in diagnosis and treatment of retained foley's catheter. *Urology.* 2005;65(5):1001.
3. Limon O, Unleur EE, Unay FC, Oyar O, Sener A. An unusual cause of death: Spontaneous urinary bladder perforation. *Am J Emerg Med.* 2012;30(9):2081.e3-5.
4. Kim IY, Lee SB, Choi BK, Kim SR, Lee DW, Rhee H, et al. Bladder rupture in immediate post renal transplant period of uncertain cause. *Exp. Clin. Transplant.* 2012;10(2):180-182.
5. Merguerian PA, Erturk E, Hulbert WC, Jr Davis RS, May A, Cockett AT. Peritonitis and abdominal free air due to intraperitoneal bladder perforation associated with indwelling urethral catheter drainage. *J Urol.* 1985;134(4):747-750.
6. Spees EK, O'mara C, Murphy JB, Michigan S, Newton CG. Unsuspected intraperitoneal perforation of the urinary bladder as an iatrogenic disorder. *Surgery.* 1981;89(2):224-231.
7. O'Gorman S, O'Brien A, Leahy A, Butler MR, Keane FB. Rectovesical fistula due to indwelling catheter. *Br J Urol.* 1990;65(4):424.
8. Saleem MA, Mahmoud AM, Gopinath BR. Spontaneous urinary bladder rupture: A rare differential for lower abdominal pain in a female patient. *Singapore Med J.* 2009;50(12):e410-e411.
9. Tabaru A, Endou M, Miura Y, Otsuki M. Generalized peritonitis caused by spontaneous intraperitoneal rupture of the urinary bladder. *Intern Med.* 1996;35(11):880-882.
10. Galbraith JG, Butler JS, McGreal GT. Opioid toxicity as a cause of spontaneous urinary bladder rupture. *Am J Emerg Med.* 2011;29(2):239.e1-239.e2393.