

Urinary Bladder Perforation Due to Urethral Catheter in an Old Lady: A Case Report

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Received: October 11, 2019; **Published:** October 24, 2019

DOI: 10.31080/eccmc.2019.02.00104

Abstract

Indwelling Foley catheter is widely used in hospitalized patients, especially in elderly patients and those in high dependency units and medical intensive care units. Furthermore, it should be kept in mind that perforation of bladder may occur rarely at the time of the insertion. Here by we present a case of a lady aged 58 years old lady, who was referred from another local hospital to emergency department at our hospital. She was catheterized in emergency and shifted to intensive care unit as part of her management as she was in critical condition (secondary to pneumonia) at that time. Then on 5th day of admission her catheter was changed because there was some blockage in the older one and she had also developed hematuria. Workup was done showing iatrogenic peritoneal bladder perforation caused by Foleys catheter insertion. Conservative management with indwelling Foleys catheter for 4 weeks resolved her condition.

Keywords: Extra Peritoneal; Bladder Rupture; Iatrogenic; Catheterization

Introduction

It is known in literature that indwelling Foley catheter has on some very rare occasions resulted in perforation of the urinary bladder. It is a grave injury with a high rate of mortality that requires swift and an accurate diagnosis for prompt treatment plan. Computed tomography (CT) cystography, is the gold standard to make a diagnosis of bladder ruptures. Indwelling Foley catheter is widely used in hospitalized patients, especially in elderly patients and those in high dependency units and medical intensive care units. Insertion of catheter in patients, especially in the elderly and frail immobilized patients, needs meticulous technique by the duty doctor or the nursing staff [1-3]. Furthermore, it should be kept in mind that perforation of bladder may occur rarely at the time of the insertion or due to prolonged duration of the already indwelling catheter in bladder of the patient. So, it is stressed here that emergency physicians, intensive care staff and radiologists must be familiar with the presenting signs, symptoms and radiological findings of this potential iatrogenic injury associated with Foley catheters [2,4].

In past, bladder rupture due to prolonged indwelling catheter has been sparsely reported but Spontaneous perforation of bladder or perforation on first or second day of catheter placement has been all the more rare phenomena. The presentations may vary from abdominal distension, pain, and urinary ascites to apparent acute renal failure [1,4]. Prolonged catheter in bladder may weaken the wall and make

it prone to rupture. On the other hand, bladder rupture on first or second day of Foleys insertion seems to be more related to the iatrogenic perforation secondary to faulty technique of Foleys catheter placement [1,5]. Herein, we are presenting a case of extraperitoneally bladder injury due to placement of a urethral catheter in a female patient, who was frail elderly woman.

Case Report

A lady aged 58 years old was referred from another local hospital to emergency department at our hospital. She presented with shortness of breath and was drowsy (cause of this altered mental status was respiratory distress secondary to pneumonia). She was intubated in emergency department for respiratory distress. Before intubation her pulse rate was 96/minute, blood pressure of 140/90 mm Hg, respiratory rate of 34/min and was having fever of 101F. Her oxygen saturation level was 82% on room air.

She was shifted to medical intensive care unit. After that She was extubated after one week. Then she was shifted to high dependency unit. She was catheterized during the hospital stay and developed hematuria on 5th day after washing the bladder for possible blockade of catheter. Physical examination showed mild tenderness in the suprapubic region. Apart from this, she was alert and awake. Initially bladder wash was done and hematuria was settled. She had no history of flank pain, weight loss, smoking or gross hematuria. She had hypertension in her comorbid and was not on any blood thinner medications. There was no prior urological surgery history. Apart from this, she had no prior history of gynecological malignancy/surgery/chemo or radiation therapy or endometriosis, which are well known in literature to predispose to iatrogenic bladder perforation. Urology consult was requested by intensive care unit team as she had an ultrasound of abdomen and pelvis that showed some mass in bladder and pelvic cavity: probably a mass or hematoma.

Then CT scan abdomen pelvis with cystogram was done that showed large heterogeneous hyper dense mass in right hemi pelvis: without any post contrast enhancement, likely representing large hematoma associated with defect in right lateral wall of urinary bladder with contrast extravasation into this hematoma (Figure 1). It was labelled as an extra peritoneal rupture of urinary bladder. Her tracheal and urine cultures were sent which showed candida growth in tracheal secretions. while urine was negative for any growth of microorganisms. She was given fluconazole and empirically given carbapenems. Blood culture had no growth. She was catheterized for 4 weeks and patient had no further episode of hematuria during that observation period. On follow up a CT scan abdomen and pelvis with contrast was done, that manifested complete resolution of the previously seen large hyper dense mass/hematoma in the right hemi pelvis. No more contrast extravasation was noted as seen previously on CT scan. Later on Flexible cystoscopy was done but no suspicious areas were seen and urine cytology report was also negative, that ruled out the suspicion of urinary bladder cancer. She was passing her urine normally on follow up. There were no urinary lower tract symptoms or episode of any hematuria on further follow up.



Figure 1: Contrast extravasation seen on CT cystogram- Sagittal view-see blue arrow.

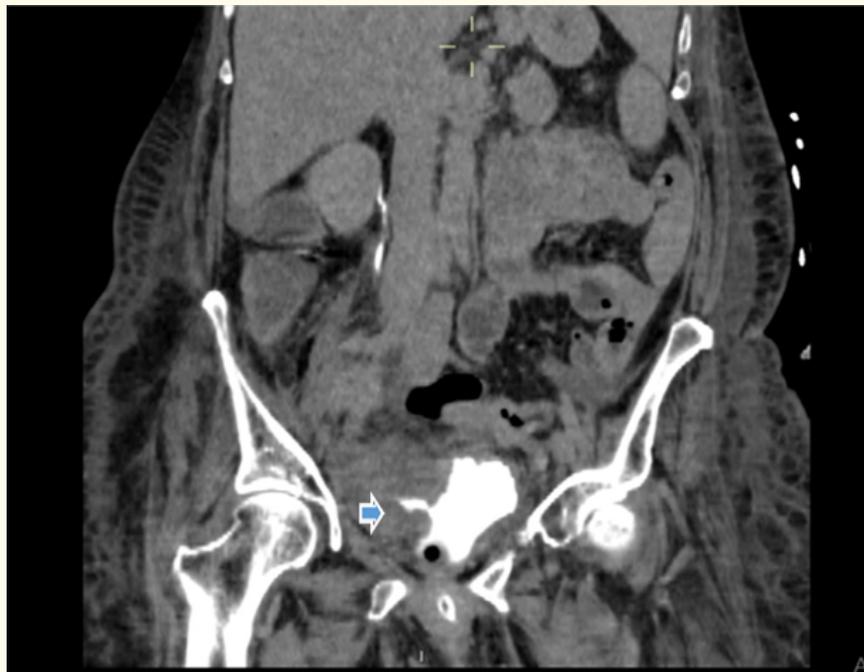


Figure 2: Contrast extravasation into the hyperdense hematoma on right hemipelvis as seen on CT cystogram-Coronal view- see blue arrow.

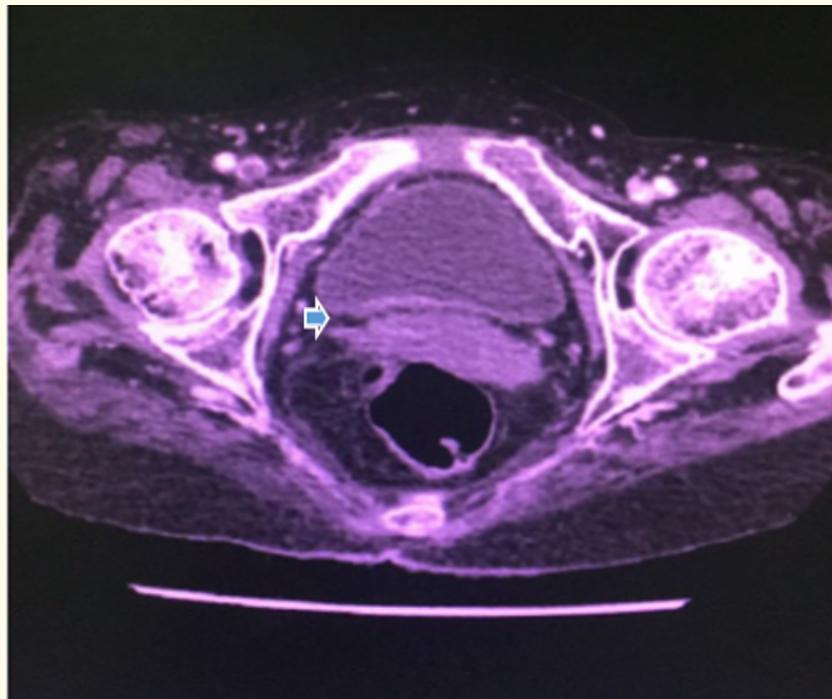


Figure 3: Hematoma resolved after conservative management.

Discussion

Urethral catheterization has been one of the most commonly needed procedures in healthcare system around the globe [6,7]. It's considered often a safe and comparatively an easy procedure if it's performed by a skilled healthcare staff. Despite its being simple procedure, clinicians and even urologists at rare instances can face noticeable difficulties resulting in traumatic catheterization. The resultant complications include bleeding, infection, urethral or even bladder injury [7,8]. Such complications are more common in men, especially in patients having underlying issues related to those of urethral strictures or high position of bladder neck secondary to an enormously enlarged prostate. In the similar fashion, placing a urethral catheter in a patient suffering from neuropathic bladder can be a daunting task owing to the need of periodic catheterization that results in more trauma to the urethra. There may at times be some serious complication. In past some of Serious complications including peritonitis and formation of rectovesical fistula have also been documented in literature [6-8]. They have been mostly noted in males while no case of iatrogenic bladder perforation due to catheterization in female has been reported to our knowledge yet.

In modern days, timely diagnosis along with appropriate management results in best possible outcomes. Early signs for clinical suspicion, coupled with accurate and in depth radiologic studies, help in initiating an early intervention and meticulous management. In our patient we first did an ultrasound Abdomen and pelvis that showed some mass effect in bladder wall, then a CT Scan (Computed tomography) and cystogram was done that manifested an extra-peritoneal bladder perforation due to the catheter insertion in ward. A catheter was placed for 4 weeks and the perforation was healed and closed. Such kind of conservative management has been seen in case reports like this in past [8].

Perforation of the urinary bladder can at times occur spontaneously in the wake of a thin and weakened bladder wall. Aging is said to be associated with an increased pressure inside the bladder, which might increase risk of perforation [6]. Spontaneous rupture has been accounted for less than 1% of all the bladder injuries. Previously mostly cases were reported in elderly age patients: who were either bed ridden or frail or having long indwelling catheter. In this case, patient was frail and old age but she had no history of long term indwelling catheter. Reason for such kind of spontaneous or iatrogenic bladder perforation in elderly patients is difficult to comprehend fully, however we are of the view that the bladder wash by on duty nursing staff resulted in a bladder wall breach. This underscores the fact that even simple catheter wash or bladder wash can cause bladder injuries. It's better to call urology resident or medical officer on duty to assess and wash the catheter for suspicion of catheter blockade. She was not suffering from any pelvic malignancy or inflammatory bowel disease. She had no history of prior bladder trauma or pelvic irradiation that had been the main predisposing factors in few of the previous similar case reports. As mentioned already, she had no prior history of gynecological malignancy/ surgery/ chemo or radiation therapy or endometriosis, which are well known in literature to predispose to iatrogenic bladder perforation.

Hence, it is imperative for the senior clinicians, nursing staff and especially the urologist to spread awareness regarding the potential complications that may result from catheterization procedures and especially bladder wash in frail old patients. The junior healthcare providers should be taught and encouraged to adopt a meticulous and proper technique, while catheterizing patients especially the elderly frail patients. There should be training sessions regarding such awareness programs and should be under adequate supervisions by urologists or senior clinicians. It will help avoiding such kind of complications by the healthcare staff linked with the patient care in future.

Conclusion

The junior healthcare providers should be given adequate training regarding safe catheterization. Furthermore, bladder washing awareness should be spread among nursing staff, as it may also cause bladder perforation in such frail patients. Hence, it's better to call urology on duty doctors to assess such cases.

Conflicts of Interest

None.

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Volume 2 Issue 8 November 2019

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