

Case Study: Complete Bladder Herniation (Preoperative Diagnosis).

Dr. Mostafa shendy, Mohammed Balbola, Emila Paul, Dr. Ebthal Hassan

Abstract: **Introduction:** Bladder herniation is a relatively uncommon condition, most of the cases are diagnosed intraoperatively as the patient is often asymptomatic, however; few patients could develop dysuria, frequency, incomplete emptying, and even acute kidney injury. Surgical repair is considered the standard treatment of bladder herniation. **Presenting case:** A case of a 69-year-old male presented after noticing a right groin lump while he was gardening, computerized tomography detected complete herniation of the bladder into the right scrotum associated with bilateral hydronephrosis. Afterward, the patient developed acute kidney injury which required urethral catheterization and two-stage voiding. Bladder reduction and mesh surgical repair were performed, and the patient recovered without any complication. **Discussion:** Bladder hernia represents 1-4% of the inguinal hernia. It is related to multiple factors like obese men, weak pelvic floor muscles, decrease muscle tone, in addition to benign prostatic hyperplasia. It could involve herniation of part of the bladder or complete herniation of the bladder into the inguinal canal. The herniated bladder is a relatively uncommon condition so it should be suspected if the hernia is accompanied by significant urinary symptoms. Our case is considered the perfect presentation for bladder hernia. The patient presented with the common complication as he had acute kidney injury, incomplete bladder emptying, which required two-stage voiding, and discovered the right testicle blood supply is compromised during the repair. In addition to that, he was diagnosed preoperatively properly. Moreover, he was managed by surgical repair as recommended. **Conclusion:** Scrotal-inguinal cystocele is an uncommon condition that could lead to acute kidney injury and need to be managed urgently with surgical repair.

Keywords: bladder hernia, inguinoscrotal hernia, renal failure secondary to hernia, and 2 stages catheterization.

Introduction:

Scrotal cystocele means complete or partial herniation of the bladder with or without herniation of the ureteric orifices into the scrotum, this relatively uncommon condition but not rare. Most of the cases are diagnosed incidentally during the radiological evaluation of the inguinal hernia, as most of the patients usually don't complain from any urological symptoms but also can complain of dysuria, frequency, haematuria and the most common symptoms is a reduction of hernia size after micturition. Surgical repair is considered the favourable choice of treatment.

Case presentation:

We are presenting a 69 years old male who presented to the surgical clinic for a routine repair of what was suspected to be an inguinal hernia, as the patient mentioned that while he was gardening a few months ago he felt severe pain in his right groin and a few weeks later he noticed a lump in his right groin, hence the referral was done for general surgery.

At this stage, the patient did not complain of any urinary symptoms.

Physical examination showed a large inguinal scrotal hernia, which was not reducible, secondary hydrocele was suspected as well. The patient height is 173 cm and weighs 96 kg. (BMI = 32) Laboratory investigation: Serum creatinine: 80umol/L. Egr: 86 mL/min/1.73m². Haemoglobin level: 139 g/l Total white cell count: 5.4 10⁹ /L. Inguinal scrotal Ultrasound scan was done and showed mild bilateral hydronephrotic kidneys, with the right scrotal fluid collection, and the patient starts to develop acute kidney injury, severe pain and became very distressed. SO computerized tomography (CT) abdomen/pelvis was performed which surprisingly showed: a large direct inguinal hernia that includes the whole urinary bladder and both ureteric orifices, in addition to moderate bilateral hydronephrosis (figure 1,2).

Computerized tomography (CT):

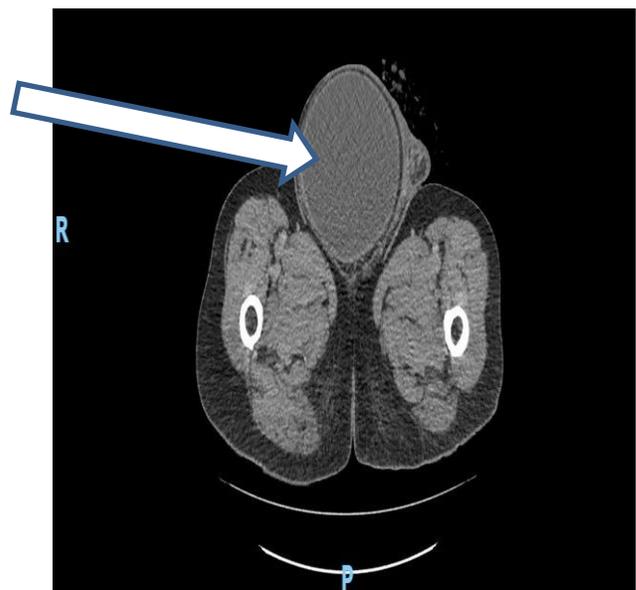


Figure 1 CT scan showing completely herniated bladder into the right hemiscrotum.

- Dr. Mostafa shendy; Urology speciality doctor, Leighton Hospital Email: Mostafa.shendy@nhs.net
- Mr. Mohammed Balbola; General surgery Registerer, Leighton hospital Email: Mohamadbalbola@yahoo.com
- Mrs. Emila Paul; General surgery consultant, Leighton hospital
- Dr. Ebthal Hassan; General practitioner

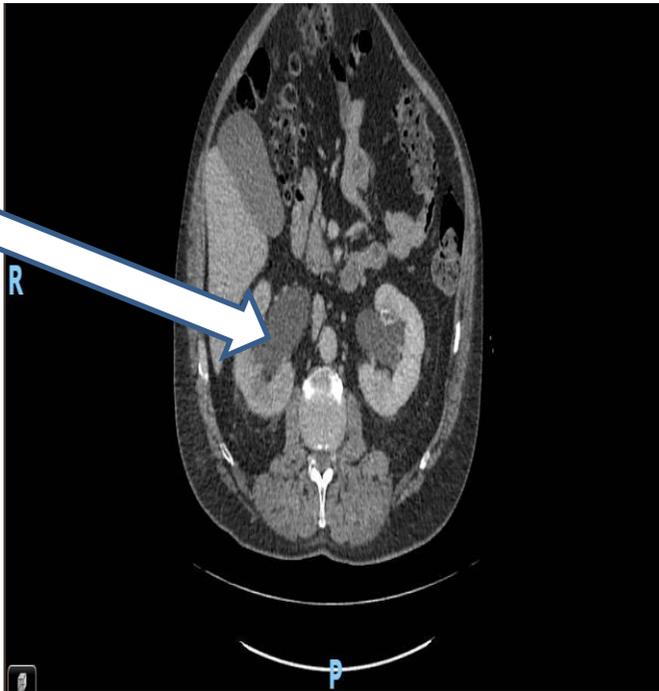


Figure 2 bilateral moderate hydronephrotic kidneys.

Due to the findings, a urethral catheter was inserted to treat the obstructive uropathy, but the patient was still distressed, his AKI did not improve, and he was still complaining of incomplete emptying of his bladder. SO, two stages of bladder emptying were recommended by gentle compressing against the hernia to allow the bladder to be completely emptied. The patient after that had urgent open mesh surgical repair of his inguinal scrotal hernia and right side orchidectomy as the blood supply to the right testicle was compromised due to the prolonged compression (Figure 3,4).



Figure 3 inguinal sac containing the herniated bladder.



Figure 4 showing the herniated bladder.

Discussion:

Almost 1-4% of an inguinal hernias that include the bladder and it more common in middle-aged obese men, there are a lot of factors that could contribute to bladder hernia including weakness of the pelvic floor muscles, decrease bladder tone, and benign prostatic hyperplasia. The patient is usually asymptomatic, but he can also complain of dysuria, frequency, urgency, and more significantly is a decrease of the hernia size after micturition or the need to double stage voiding in which the patient feels that he need to compress his scrotum to completely empty his bladder which happened with our patient^[2]. Bladder herniation could involve part of the bladder, or the whole bladder also could include both ureteric orifices which could lead accordingly to bilateral hydroureteronephrosis as shown in (figure 2) and acute kidney injury. As the herniated bladder is an uncommon condition, the clinician should have high suspicion index towards it especially if the patient is complaining of urinary symptoms. Adequate history taking and physical examination are very important to establish the possibility of bladder herniation. Computerized Tomography (CT) scan has been used to confirm the diagnosis. Voiding cystourethrogram could be used if a CT scan is inconclusive^[3]. Moreover, cystoscopy could be used to exclude any abnormalities within the bladder. Our patient presented with most of the complication from bladder hernia as he was asymptomatic at the beginning then he started to develop acute kidney injury, CT scan revealed herniated bladder into the scrotum and bilateral hydroureteronephrosis, so he was catheterized but he was still complaining of incomplete bladder emptying so two stage bladder emptying was recommended. Standard treatment of the inguinal bladder herniation involves reduction of the bladder and repair of the hernia, this could be done laparoscopically or with inguinal incision repair, also bladder resection could be done in case of bladder wall necrosis, tight hernial neck of bladder tumor in the herniated part^{[3][4]}. In our patient, we used a urethral catheter to slightly distend the bladder with saline to make its borders clear during the repair And we opted to open surgical repair as it was thought that prolonged compression from bladder herniation compromised the blood supply to the right testicle so right orchidectomy was performed.

conclusion:

we are presenting a relatively uncommon case study of a completely herniated bladder into the right hemiscrotum complicated by acute kidney injury and was managed with mesh open surgical repair and right orchidectomy and the patient recovered well without any complication.

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