

# Inguinal Bladder Herniation: Two Case Reports and Review of Literature

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## ABSTRACT

Inguinal scrotal hernia of the urinary bladder is a relatively rare condition in the clinical practice. It accounts for 1–4% of cases of inguinal hernias. Most patients are asymptomatic and are diagnosed incidentally on diagnostic imaging or during surgical repairs. They require a surgical intervention to correct the abnormality. This is a study of two cases that were seen and evaluated in our institute with bladder herniation with discussion of management plans and outcomes with a review of literature. Inguinal scrotal hernia is a rare condition to see in clinical practice. Early diagnosis is essential to prevent complication. Surgical management is the only mode of treatment.

**Key words:** Bladder, Complications, Diagnosis, Inguinal scrotal hernia

## INTRODUCTION

The term “scrotal cystocele” was first proposed by Levine in 1951 to describe an inguinal-scrotal bladder hernia.<sup>[1]</sup> The incidence of inguinal hernia with bladder involvement was reported to be in the range of 1–4% of inguinal hernias and may reach up to 10% among obese older males.<sup>[2]</sup> Most cases are due to a small herniation of the bladder or diverticula of the bladder. A sliding inguinoscrotal hernia involves the whole urinary bladder, which is known as scrotal cystocele, is an uncommon clinical condition.<sup>[1]</sup> Most patients are asymptomatic, and the diagnosis is made incidentally by radiological imaging or intraoperatively during hernia repair.<sup>[3]</sup> Surgical intervention is required in most cases.<sup>[4-6]</sup>

## 1<sup>ST</sup> CASE REPORT

An 80-year-old male patient who is known to have Benign prostatic hyperplasia on alpha blockers and 5 alpha reductase, hypertensive, and ischemic heart disease who presented to

the emergency department with dizziness and generalized weakness for 1-month duration. These symptoms were associated with moderate suprapubic pain and dark urine, burning micturition, frequency, urgency, subjective fever, and chills. On physical examination, the right hemiscrotum swelling was noted with suspicion of a spermatocele. Laboratory investigations revealed leukocytosis, elevated renal function test, and positive urine culture for *Escherichia coli*. Abdominal and pelvic ultrasonography (US) was done and it demonstrated mild hydronephrosis of the right kidney [Figure 1]. Scrotal US demonstrated a large right and small left epididymal cyst [Figure 2], right scrotal inguinal hernia contained fat, and a short segment of the bowel loop [Figure 3]. During his hospital course for investigation, he developed septicemia and intestinal obstruction signs and symptoms. Computed tomography (CT) scan without contrast was done and it showed bilateral indirect inguinal hernia; the largest sac was seen on the right side and it showed herniation of the most anterolateral wall of the urinary bladder and the right ureter in the right scrotum causing hydroureteronephrosis. Cystogram was done and it showed the right inguinoscrotal hernia [Figure 4]. The patient was kept on a Foley’s catheter,

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antibiotics and conservative therapy for his gastrointestinal symptoms with good recovery. The decision of hernia repair surgery with prostate surgery was discussed with the patient and family. Due to high risk of anesthesia and comorbidities, the patient was given a 2-week follow-up to decide.

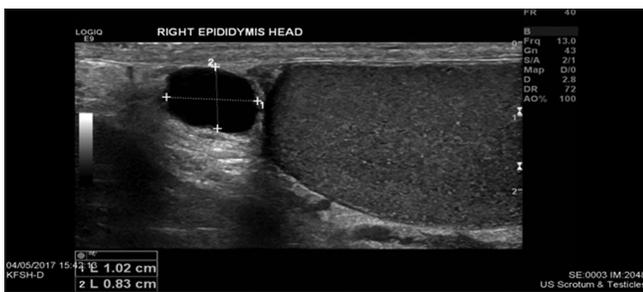
Unfortunately, the patient developed cardiac event few days after and he passed away.

## 2<sup>ND</sup> CASE REPORT

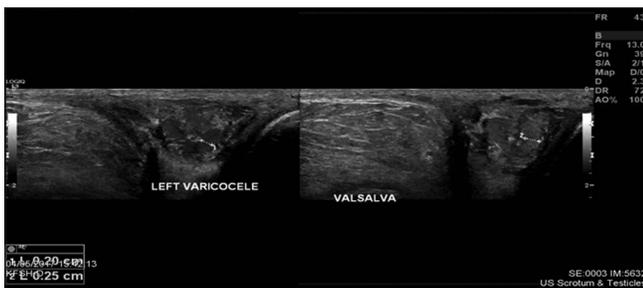
A 62-year-old male is a known case of diabetes mellitus, hypertension, ischemic heart disease, and left inguinal hernia repair for more than 25 years ago. He presented to the outpatient department with the left inguinal swelling for 6 months duration. On physical examination, the left inguinal reducible non-tender swelling was noted and it was positive to cough impulse. Laboratory investigations were all within normal. Abdominal and pelvic US revealed 1.9 cm right groin defect-containing fat [Figure 5]. CT with contrast was done and it showed the left inferolateral urinary bladder hernia through a 1.8 cm defect in the left inguinal canal [Figure 6]. Cystogram was done and it showed the left urinary bladder cystocele herniating through the left inguinal canal [Figure 7]. Laparoscopic bilateral hernia repair (large left direct inguinal hernia and small right indirect inguinal hernia) was done.



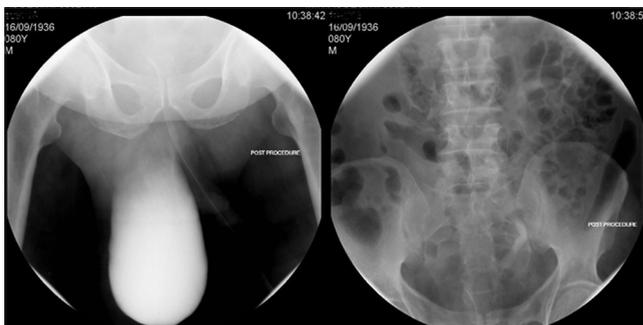
**Figure 1:** Kidney ultrasound demonstrates mild hydronephrosis of the right kidney



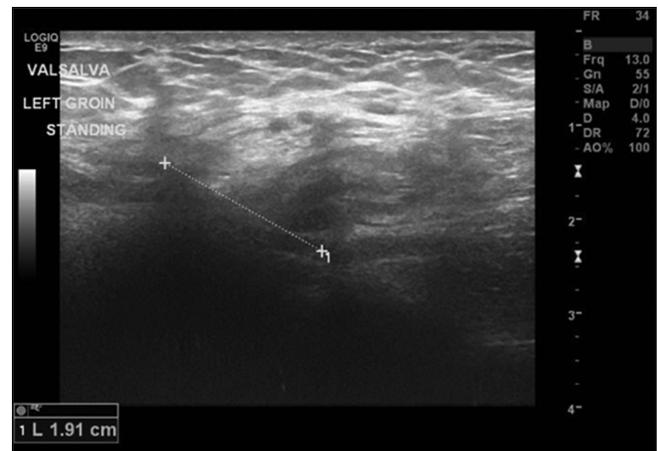
**Figure 2:** Scrotal ultrasound demonstrates a large right epididymal cyst



**Figure 3:** Scrotal ultrasound demonstrates the left varicocele with detectable reflux



**Figure 4:** Cystogram demonstrates right inguinoscrotal hernia



**Figure 5:** Groin ultrasound demonstrates a defect measuring 1.9 cm in the right groin compatible with inguinal hernia, containing fat at the time of scanning



**Figure 6:** Computed tomography with contrast demonstrates left inguinal hernia containing part of the urinary bladder with no bowel content



**Figure 7:** Cystogram demonstrates left urinary bladder cystocele herniating through the left inguinal canal

## DISCUSSION

Urinary bladder herniation through the inguinal canal is uncommon. The incidence is <4% and may reach 10% in elderly patients.<sup>[2]</sup> This may increase the risk of complications during surgical repair. It is more common in males and usually seen on the right side.<sup>[2,7]</sup> Although most inguinal hernias are commonly indirect, vesical hernias are mostly direct.<sup>[1]</sup> It has been classified into paraperitoneal (the most common), intraperitoneal, and extraperitoneal.<sup>[8,9]</sup>

The risk factors behind the inguinoscrotal bladder hernias are multifactorial and can be due to:

1. Weakness of the abdominal and bladder walls (impaired bladder tonus or bladder detrusor muscle weakness)
2. The presence of bladder outlet obstruction such as prostatic enlargement or urethral stricture disease
3. Increases intra-abdominal pressure during micturition or defecation
4. Weakness of the pelvic floor or space-occupying pelvic masses
5. Obesity
6. Trauma
7. Male sex
8. Older age group (50 years and above).<sup>[8-10]</sup>

Most of the patients are asymptomatic, and the diagnosis is made incidentally by radiological imaging or intraoperatively during herniorrhaphy or identified after intraoperative injury. When symptomatic, they may present with scrotal swelling and obstructive urinary tract symptoms.<sup>[3,11,12]</sup> They may give a history of pushing the swelling on their groin or scrotum to empty their bladder completely, or the size of the hernia is decreasing in size after urination.<sup>[10]</sup>

There were about 150 scrotal cystocele cases published until 2004.<sup>[13]</sup> Oruç *et al.* also found 116 inguinal bladder hernia containing bladder in English-based literature between 1967

and 2003 on PubMed. According to finding in 116 cases of inguinoscrotal hernia founded that urinary bladder was found within the sac, 50 of scrotal hernia founded that urinary bladder was found within the sac, and two cases of femoral hernia founded that urinary bladder was found within the sac.<sup>[14]</sup>

Patients may present with complications of an inguinoscrotal bladder herniation which includes recurrent episodes of urinary tract infection, cystolithiasis, vesicoureteric reflux, sepsis, unilateral or bilateral ureteric obstruction, renal failure, and strangulation with secondary ischemia of the bladder wall and bladder rupture.<sup>[8,9]</sup> Giant inguinoscrotal hernias can result in compromising respiratory and cardiac function due to the augmentation of the intra-abdominal pressure that can lead to abdominal compartment syndrome.<sup>[13]</sup>

Early diagnosis is vital to prevent complications and to minimize incidental iatrogenic injuries.<sup>[3]</sup> Therefore, proper history taking, physical examination, and radiological studies are essential.<sup>[15]</sup> Both US and CT of the lower abdomen and scrotum aid in the diagnosis and should be immediately performed when a suspicion of comorbidity exists and to prove the grade of incarceration of the bladder into the scrotum.<sup>[16-18]</sup> Other radiological studies such as cystography, intravenous pyelography, and magnetic resonance imaging can be done.<sup>[19]</sup>

Surgical therapy may be the only mode of treatment that can offer these patients a return to their previous functional status and improve their quality of life. In the past, a partial resection of the herniated portion of the bladder was routinely performed, but, nowadays, resection is done only in the presence of a tumor in the herniated bladder, bladder necrosis, or herniated bladder diverticulum. Otherwise, tension-free herniorrhaphy with or without mesh should be performed.<sup>[4-6,9,10]</sup>

## CONCLUSION

Urinary bladder herniation through the inguinal canal is an uncommon clinical condition, yet it should be suspected in elderly obese patients with or without obstructive urinary symptoms. Early diagnosis is important to prevent complications and to minimize iatrogenic injuries. Surgical therapy may be the only mode of treatment that can offer these patients a return to their previous functional status and improve their quality of life.

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