

## A Rare Presentation of Urinary Bladder Diverticula as an Inguinal Hernia - A Case Report

**Dr. Konark Thakkar<sup>1</sup>, Dr. Panth Gheewala<sup>2</sup>, Dr. Hanuwant Singh Rathore<sup>3</sup>**

<sup>1,2,3</sup>Department of General Surgery, Pacific Medical College and Hospital, Udaipur, Rajasthan, India.

### ABSTRACT

Inguinal Bladder Hernia (IBH) is a common disorder requiring adequate surgical management. Association with multiple organs is prevalent but bladder involvement is rare, with 1-3% of inguinal hernias. Patients are generally asymptomatic and difficult to diagnose thus presenting as an incidental finding or diagnosed during surgery. Most literature advocate surgical repair as a standard, an open surgical approach is preferred more than laparoscopic.

**KEYWORDS:** Inguinal bladder hernia, Bladder diverticulum, bilateral inguinal hernia, open surgical approach

### ARTICLE DETAILS

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### INTRODUCTION

Even though inguinal hernias are common nowadays, bladder involvement in said hernias remains rare. Rarely do patients present with lower urinary tract symptoms (LUTS) making the diagnostic approach and intraoperative strategy problematic for surgeons. Preoperatively, diagnosis is confirmed by micturating cystourethrogram (MCU), retrograde urethrogram (RGU), Ultrasonography (USG), or computed tomography urethrogram (CTU), and the treatment of choice is open surgery hernia repair with bladder contents either reduced or resected and repaired. We present a rare case of right-sided Inguinal Bladder Hernia containing bladder diverticulum treated with an open surgical approach.

### CASE REPORT

A 63-year-old man presented to the urology outpatient department (OPD) with complaints of swelling on both sides of the groin for the last 2 months and difficulty holding urine for a longer period followed by the urgency to void with the poor stream, patient denied any episodes of nausea, vomiting, and fever. The patient also complained of an increase in the size of the swelling and dull aching pain on the right side in the inguinal region, which didn't change on lying down or on rest and it relived on micturition. The patient denied any episodes of nausea, vomiting, and fever.

On physical examination, swelling of approximately 1x0.5 cm in diameter was found in the left inguinal region, and swelling of approximately 2x1 cm in diameter was found in the right inguinal region. There was a marked increase in size,

pain, and tenderness in left inguinal swelling on working, and with right inguinal swelling increases in bladder fullness followed by a reduction after micturition. No such findings were noted in left inguinal swelling. Reducibility was present in right inguinal swelling post micturition and marked decreases in the size of swelling in left inguinal swelling. Laboratory data were normal. USG of the whole abdomen showed a herniation of omental fat and bladder through a defect of 14mm in the right inguinal region and herniation of omental fat through a defect of 20mm in the left inguinal region. RGU showed abrupt narrowing at the level of the membranous urethra causing proximal dilatation and distal narrowing of the rest of the urethra, anterior urethra appears normal but there was irregular collection being noticed in the bladder region thus MCU was advised (Figure 1). On MCU complete dilatation of the bladder by the contrast media was seen along with outpouching in the right lateral inferior region of the bladder, the possibility of bladder diverticula was suspected (Figure 2).

After confirming the patient's fitness to undergo anesthesia, surgery was planned. The right inguinal incision was given and a hernial sac containing bladder diverticula and omental fat was identified after mobilization of the spermatic cord (Figure 3). The hernia sac was reduced and the defect was closed. Prolene mesh was placed and the incision was closed in layers. Similarly left inguinal incision was given and a hernial sac containing omental fat was identified. The hernial sac was reduced after adhesiolysis and prolene mesh was placed. Incision closure was done in layers. The operative

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time was 85 minutes and the amount of blood loss was 25ml. The patient had an uneventful recovery with 5 postoperative days.

Along with this TURP (Transurethral resection of Prostate) was done, as the prostate was enlarged and the patient had LUTS.

### DISCUSSION

Involvement of urinary bladder in 1%-3% of all inguinal hernias. It is often unilateral with a right-sided male predominance of 70% [1]. Some common risk factors include older age, obesity, smoking, and a history of herniorrhaphy [2]. Factors influencing the development of bladder hernia are the presence of lower urinary tract obstruction leading to distension of the bladder along with the weakening of the abdominal and bladder wall enabling it to slide out of the dilated inguinal ring, marked with constant increment in the pelvic pressure during straining. Ureter herniating into hernia sac with or without bladder has been reported, hence patient may present with hydronephrosis, rarely with renal failure [3].

Small IBHs are rarely symptomatic. Large IBH presents with swelling in the groin or scrotum and LUTS. LUTS are usually due to bladder obstruction or infection. It may also present with dual voiding [3]. Micturition involving natural bladder emptying is present in 1<sup>st</sup> stage, 2<sup>nd</sup> the stage involves voiding by manual compression of hernia [3], [4].

Diagnosis of most IBH is done intraoperatively (77%), preoperatively (7%), and postoperatively (16%) due to complications [4],[5]. Different diagnostic modalities are usable [5]. The most accessible modality is USG which may demonstrate hypoechoic mass lesion protruding from the bladder through the inguinal canal into the scrotum. MCU is the best diagnostic imaging modality that may reveal a dog ear-shaped bladder in the scrotum [3]. CT indicated in obese males >50 years of age presenting with inguinal swelling and LUTS [4]. Evaluation of the bladder and prostate is essential to confirm the diagnosis which can be achieved through urologic diagnostic modalities like flexible cystoscopy. It is especially recommended in cases presenting with gross hematuria to exclude additional pathology of the bladder. Inguinal bladder hernia can be mistaken for bladder diverticulum due to radiologic and cystoscopic appearances [5].

Open surgical repair is the preferred treatment [3],[5]. The surgical approach depends on the patient's condition, local status, and the surgeon's choice. It has been advised to catheterize the patient before surgery. The most important part of the surgical procedure remains the clear identification of each anatomic element inside the hernia sac [4]. The urinary bladder involved in IBH should be resected and/or reduced from the hernia sac and brought back to its normal

anatomic position [3],[5]. Previously, herniated portion of the bladder was resected in massive inguinal bladder hernias [5]. Bladder resection indications include bladder trauma during hernioplasty, necrotic bladder neck, tumors of the bladder, diverticulum of the bladder, and hernia neck of <5mm in diameter [3],[4],[5]. Iatrogenic damage to the bladder during hernioplasty is common with data suggestive of a 12% occurrence in inguinal bladder hernias [4],[5]. This rate drops when bladder involvement is diagnosed preoperatively [4]. Resection of the bladder can further manifest infections [3]. Less frequently patients may want conservative approaches such as wait and watch or intermittent catheterization (to reduce bladder out of hernia sac [5].

### CONCLUSION

IBH resulting due to urinary bladder involvement is a rare condition in generally common inguinal hernias. Patients to be considered are elderly males >50 years with LUTS. Pre-operative imaging plays a key role in preventing iatrogenic injury and complications. The amount of bladder involvement and damage should be assessed astutely and repair should be performed for any damage. The open surgical approach remains the standard of treatment consisting of returning the bladder to its anatomic position, repairing the defect with/without mesh, and treating subvesical obstruction if diagnosed. Particular emphasis should be placed on excluding urologic malignancies intra- or postoperatively.

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**Figure 1. RGU showing the irregular collection in bladder**



**Figure 2. MCU showing bladder diverticula in the right inferolateral region of the bladder**



**Figure 3. Right inguinal hernia sac containing bladder diverticula and omentum**