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Case Report

Unusual case of bladder hernia presenting with abdominal pain

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ABSTRACT

Urinary bladder hernias are rare and often underdiagnosed causes of lower abdominal and groin pain with or without urinary symptoms, particularly in elderly men with urinary symptoms presenting in emergency departments. This case highlights the importance of recognizing bladder herniation as a differential diagnosis in the emergency department for such presentations particularly elderly men with vague lower abdominal pain with or without urinary symptoms. It could also present with or without lump in groin. This case is 39-year-old male presented with chronic lower abdominal and groin pain. Frequency of micturition ultimately diagnosed as an inguinal bladder hernia. Bladder involvement occurs in 1–4% of inguinal hernias, though preoperative diagnosis remains rare (≤7%) due to non-specific symptoms. This case underscores the importance of considering bladder herniation in patients with known hernias who develop urinary symptoms or persistent pain. Computed tomography (CT) cystogram confirmed the diagnosis, and open hernioplasty with mesh repair resolved symptoms without recurrence. Early recognition and tailored surgical intervention prevent complications like obstruction or strangulation.

Keywords: Inguinal hernia, Bladder hernia, Abdominal pain, CT cystogram, Herniorrhaphy

INTRODUCTION

Inguinal hernias affect 27% of men and 3% of women globally with 20 million repairs performed annually bladder involvement occurs in 1–4% of cases, rising to 10% in obese males >50 years.[1,2]

Risk factors include advanced age, male sex, chronic bladder outlet obstruction (e.g., benign prostatic hyperplasia), and obesity.[3] Bladder hernias are classified anatomically as: para peritoneal (most common, 62% of cases), extra peritoneal (35%), and intraperitoneal (2.7%). Despite their prevalence 10% are diagnosed preoperatively, often due to asymptomatic presentation or non-specific symptoms (e.g., urinary frequency, abdominal discomfort).[4] This report highlights diagnostic challenges and management strategies for bladder hernias causing abdominal pain.

CASE REPORT

Clinical history

A 39-year-old male presented with dull suprapubic pain and frequency of micturition. Pain exacerbated with standing, straining, and at day's end, partially relieved by lying down. He reported new urinary symptoms: incomplete emptying, frequency and burning micturition. No fever, nausea, or bowel changes. This was his third attendance to emergency department. On each of the previous occasions he had negative Urine dipstick. He was prescribed analgesia and discharged. Previous evaluations for "groin strain" and prostatism were ineffective.

Physical examination

Abdomen was soft, mild tenderness in right lower quadrant.

Genitalia/inguinal was unremarkable.

Urinalysis/CBC/BMP indicated normal (no infection or renal impairment) urine dipstick was negative for infection one each of three occasions.

Imaging

Ultrasound confirmed bilateral inguinal hernia with bladder wall herniating into right inguinal canal.

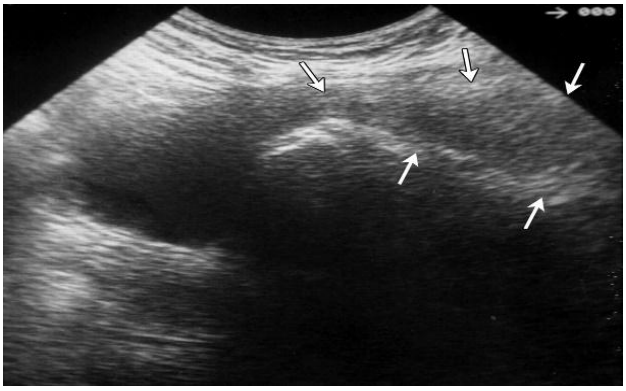

Figure 1: US image of bladder wall hernia in inguinal canal.

Computed tomography (CT) cystogram (gold standard) indicated contrast-opacified bladder herniating into right inguinal canal.

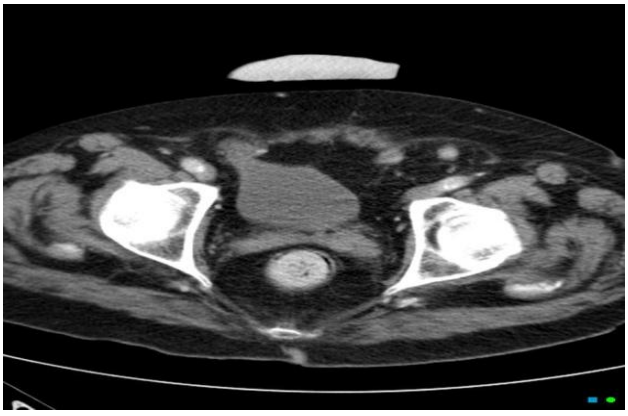

Figure 2: CT cystogram image of bladder wall hernia.

Diagnosis

Right inguinoscrotal bladder hernia causing abdominal pain and lower urinary tract symptoms.

Treatment

Patient was explained the diagnosis and referred on to general surgeon on call. Initially patient was discharged from Emergency department with follow up in outpatient clinic. Patient was followed up to chase what treatment options he was offered.

After counseling on risks of non-operation (e.g., obstruction, strangulation), the patient elected surgical repair.

Procedure

Open right hernioplasty (Lichtenstein technique) under general anesthesia was done. Operative findings showed indirect hernia sac containing bladder dome/lateral wall (para peritoneal type). Bladder viable but congested; no necrosis.

Saline instillation via Foley catheter confirmed bladder integrity. Bladder reduction + excision of hernia sac. Polypropylene mesh placement reinforcing posterior inguinal wall.

Outcome

Foley catheter removed on postoperative day 3. Complete resolution of pain/urinary symptoms at 6-week and 3-month follow-up. No recurrence at 1 year.

DISCUSSION

Lower abdominal pain and groin pain presents as diagnostic challenges in emergency departments.[1,2] Differential diagnoses is vast and may include hernias.[3]

Inguinal and femoral hernias are common and present with lump.[4]

Bladder hernias are missed in >90% of cases preoperatively.[7] Key clues include abdominal/groin pain (primary symptom in 30% of symptomatic cases).[5]

Urinary symptoms are common two-stage voiding (pathognomonic but present in only 16% cases only), frequency (17%), acute kidney injury (12%).[6]

Physical signs include lower abdominal tenderness. Urine testing is usually negative. Reduction-induced urgency, scrotal mass decreasing post-void.[8]

We need to keep low threshold in patients with vague lower abdominal pain and urinary symptoms without signs of UTI. There are multiple imaging techniques available for diagnosis but CT cystogram is gold standard for diagnosing bladder hernias.[13]

Surgical management

Urinary catheterization preoperatively aids identification and reduction.[7] Repair options include: open approach (Lichtenstein) which is gold standard for large/complex hernias; mesh reduces recurrence to <5%.[8] Laparoscopic (TAPP/EP) repair is superior for bilateral/recurrent hernias; it also allows inspection of contralateral side.[4] The high peritoneal incision approach (HPIA) minimizes bladder injury risk.

Table 1: Diagnostic modalities for bladder hernia.

Method	Sensitivity (%)	Key findings	Limitations
Ultrasound	70-80	Bladder continuity with hernia sac	Operator dependent
CT cystogram	95-100	Dumbbell shaped bladder/extent of herniation	Contrast requirement
Cystography	85-90	Bladder protrusion during voiding	Invasive
Cystoscopy	60-70	Lateralization of ureteral orifices	Misses extra peritoneal hernias

Table 2: Outcomes by surgical approach (n=75 cases).

Approach	Complication rate (%)	Recurrence rate (%)	Advantages
Open	8-12	3-5	Familiar procedure
Laparoscopic	5-8	1-3	Less postoperative pain/better visualization
Robotic	4-7	<2	Precision/3D visualization

Bladder resection

It is reserved for necrosis, diverticula, or tumors.[8]

Why does abdominal pain occur?

Pain mechanisms include: traction on bladder wall/peritoneal attachments, ischemia from chronic incarceration, urinary stasis leading to infection or calculi, and obstructive uropathy causing hydronephrosis (evident in 15% of cases).

Frequency of micturition is due to bladder wall irritation/ infection/calculi.

CONCLUSION

This case highlights that bladder hernia is an underdiagnosed cause of abdominal pain presenting in emergency departments. We need low threshold of investigation patients presenting with urinary symptoms without UTI on testing. They should be thoroughly investigated and at least offered ultrasound imaging within emergency department. Key lessons in this case report are to Suspect bladder involvement in older males with hernias and urinary symptoms. CT cystogram is the diagnostic gold standard· It helps to avoid "blind" herniorrhaphy without imaging. Surgical reduction with mesh repair is curative and prevents life-threatening complications. Laparoscopic approaches (e.g., TAPP with HPIA) offer advantages in complex cases. Early recognition and multidisciplinary collaboration between surgeons and urologists are essential for optimal outcomes.

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