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A Case of Inguinal Bladder Hernia

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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Case Report

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ABSTRACT

Aims: Inguinal bladder hernia, accounting for 1-4% of inguinal hernias, is primarily diagnosed intraoperatively, with only 7% identified preoperatively. Diagnosis is challenging due to often asymptomatic or nonspecific symptoms. Standard treatment involves surgical repair, either open or laparoscopic, necessitating meticulous planning to prevent complications, including bladder injury.
Presentation of case: A 56-year-old man presented with left inguinal swelling, reducible post-voiding. Physical examination revealed a 7x5 cm irreducible left inguinal swelling with mild tenderness and urinary urgency. Ultrasonography confirmed inguinal bladder hernia, leading to open surgical reduction and mesh closure without postoperative complications.
Discussion: Inguinal bladder hernia predominantly affects older, obese males, necessitating a high index of suspicion during evaluation for inguinal hernia. Preoperative diagnosis via history, physical examination, and radiological imaging facilitates careful surgical planning, minimizing risks of complications.
Conclusion: Clinicians should remain vigilant for inguinal bladder hernia in elderly obese males with inguinal hernia, particularly those presenting with recent lower urinary tract symptoms. Early recognition and appropriate management are crucial for optimizing patient outcomes.

Keywords: Inguinal bladder hernia; nonspecific symptoms; lower urinary tract symptoms.

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1. INTRODUCTION

Inguinal bladder hernia (IBH) was initially documented by Levine in 1951 as an infrequent occurrence, despite the bladder's proximity to the inguinal canal [1]. It manifests in approximately 1-4% of all inguinal hernias, with a higher incidence of up to 10% among obese men aged 50 years or older [2]. Factors predisposing individuals to IBH include male gender, advanced age, chronic urinary obstruction, weak pelvic musculature, and obesity [3]. Diagnosis predominantly occurs intraoperatively, with a mere 7% of cases identified preoperatively and 16% postoperatively due to complications such as bladder injury and leakage [4].

Diagnosing IBH poses a significant challenge, primarily because the majority of patients remain asymptomatic. Preoperative detection often relies on incidental radiographic findings [5]. However, symptomatic patients may present with nonspecific symptoms such as inguinal swelling and lower urinary tract symptoms (LUTS) like dysuria, hematuria, and urinary urgency [6-10]. In advanced instances, patients may report manually compressing the scrotum post-voiding to aid complete urination [5]. Associated conditions with IBH encompass benign prostatic hyperplasia (BPH), hydronephrosis, vesicoureteric reflux (VUR), and scrotal abscesses [3].

Treatment typically involves surgical repair of the hernia following bladder reduction or, less commonly, bladder resection [11]. Preoperative diagnosis allows for catheterization before surgery, reducing the risk of complications [12]. Timely recognition of IBH and appropriate imaging prior to surgery facilitate better surgical planning and mitigate postoperative complications [13-15]. Thus, a comprehensive understanding of IBH, its risk factors, diagnostic challenges, and treatment modalities is imperative for optimal patient management and outcomes.

2. CASE PRESENTATION

A 56-year-old man presented with a left inguinal swelling persisting for three months. The swelling would enlarge gradually but spontaneously reduce after voiding, occasionally causing suprapubic pain. Having undergone surgery for benign prostatic hyperplasia (BPH) four months prior, he now exhibited an irreducible 7x5 cm left inguinal swelling with mild tenderness. Physical examination also revealed a sensation of urinary urgency during attempted reduction. Hematological and biochemical parameters were normal. Ultrasonography (USG) revealed a 3 cm defect in the left inguinal region containing the bladder, diagnosing left inguinal bladder hernia (IBH). (Fig.1).

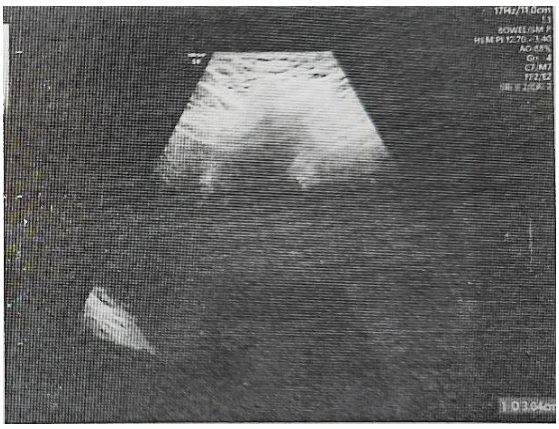

Fig. 1. Approx 03 cm defect with bladder as a content

Open left inguinal hernia (IH) repair with mesh was planned. Intraoperatively, a portion of the bladder was found within the hernia. (Fig. 2) Confirming the diagnosis, infusion of normal saline into the bladder via Foley catheter revealed a significant bulge. The bladder was then separated from cord structures, reduced into the abdomen, and the hernia defect repaired with polypropylene mesh without complications.

Fig. 2. Left Inguinal incision with cord structures separated from the bladder shown by the instrument

Postoperatively, the patient reported minimal pain on the postoperative day (POD) 1, was

ambulant, orally accepting, and tolerating, with the Foley catheter removed and no urinary symptoms. The incision site showed no signs of infection, and he was discharged home on POD 3. Follow-up revealed a healthy surgical site with no recurrence and resolution of urinary symptoms. This case underscores the importance of prompt diagnosis and appropriate surgical management in IBH, ensuring favorable outcomes and patient well-being.

3. DISCUSSION

IBH is characterized by the protrusion of the bladder, along with its peritoneal sac, through a weakened area in the abdominal fascia [16]. Risk factors for IBH include male gender, advanced age, and the presence of BPH [12]. Complications associated with IBH encompass VUR, bladder rupture, hydronephrosis, and strangulation, which can lead to ischemia and infarction of the bladder [5]. In some cases, chronic bladder distension or involvement of the ureter within the hernia sac may predispose individuals to VUR. While patients with small IBHs often remain asymptomatic, those with larger herniations typically present with groin or scrotal swelling and LUTS. Rarely, patients may describe a two-stage micturition process, requiring scrotal compression to complete urination [7].

Our case involved a 56-year-old man who presented with left inguinal swelling persisting for three months. The swelling would gradually increase in size, correlating with bladder distention, and spontaneously reduce after voiding. He also reported experiencing suprapubic pain. Notably, the patient had undergone surgery for BPH four months prior. Physical examination revealed an irreducible 7x5 cm left inguinal swelling, mild tenderness, and a sensation of urinary urgency during attempted reduction. Despite normal hematological and biochemical parameters, USG of the left inguinal region identified a 3 cm defect containing the bladder, confirming left IBH.

Diagnosing IBH poses a challenge due to its often asymptomatic nature. Therefore, a comprehensive evaluation including careful history-taking, physical examination, and radiological investigations such as USG, cystography, and CT scans is essential [5]. Given that IBH is rarely diagnosed preoperatively, maintaining a high index of suspicion, particularly in older and obese males, is crucial [2]. The USG is typically the initial and most readily available diagnostic tool capable of revealing a hypoechogenic mass protruding from the bladder into the scrotum through the inguinal canal. Voiding cystourethrography is particularly sensitive for IBH diagnosis, revealing characteristic bladder shapes indicative of herniation [17].

Treatment of IBH typically involves bladder reduction and hernia repair, often with mesh reinforcement [18]. However, bladder resection may be necessary in cases of bladder wall necrosis, true herniated bladder diverticulum, or the presence of a tight hernia neck [5]. Conservative management options, including urethral catheterization, may be considered in select cases [4]. In our case, we opted for an open inguinal hernia repair with mesh following bladder reduction. Preoperative diagnosis allowed for meticulous planning, ensuring successful surgery and a smooth recovery without complications.

4. CONCLUSION

IBH, a rare but potentially serious condition, warrants suspicion in obese males ≥ 50 years with LUTS. A multidisciplinary approach involving clinical evaluation and advanced imaging techniques is crucial for accurate diagnosis and optimal treatment outcomes. Early recognition of IBH facilitates timely intervention, reducing the risk of complications and improving patient prognosis. Standard treatment involves bladder reduction and defect repair. Intraoperative bladder damage requires immediate repair.

CONSENT

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Author has declared that no competing interests exist.

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