Case Report / Olgu Sunumu
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Inguinal Bladder Hernia and Infravesical Obstruction: A Case Report on a Rare But Important Relationship

İnguinal Mesane Hernisi ve İnfravesikal Obstrüksiyon: Nadir Ancak Önemli Bir İlişki Üzerine Bir Olgu Sunumu

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ABSTRACT

Bladder herniation is an uncommon clinical condition, comprising only 1-4% of all inguinal hernias, and is most frequently observed in elderly male patients. While many cases are asymptomatic, the presence of concomitant infravesical obstruction, such as benign prostatic hyperplasia (BPH), has been demonstrated to exacerbate symptoms and complicate management strategies. This case report aimed to present the comprehensive management of extraperitoneal bladder herniation in a 70-year-old male patient with a history of bilateral inguinal mesh hernia repair and significant BPH. The patient was treated via a single-incision surgical approach combining mesh hernia repair and open transvesical prostatectomy. This case report contributes valuable insights to the limited literature on combined surgical approaches for bladder herniation and BPH, and also underscores the significance of meticulous preoperative evaluation and multidisciplinary surgical planning in the successful treatment of complex urological cases.
Keywords: Bladder hernia; benign prostatic hyperplasia; scrotal cystocele; inguinal hernia; single-incision surgery.

ÖZ

Mesane hernisi, tüm inguinal hernilerin yalnızca %1-4'ünü oluşturan nadir bir klinik tablodur ve en sık ileri yaş erkek hastalarda görülür. Birçok olgu asemptomatik seyretse de benign prostat hiperplazisi (BPH) gibi eşlik eden infravezikal obstrüksiyon varlığının semptomları ağırlaştırabildiği ve tedavi sürecini karmaşıklaştırabildiği gösterilmiştir. Bu olgu sunumu, bilateral inguinal yama herni onarımı öyküsü bulunan ve belirgin BPH saptanan 70 yaşında bir erkek hastada gelişen ekstraperitoneal mesane hernisinin kapsamlı tedavisini sunmayı amaçlamaktadır. Hasta, tek insizyonla gerçekleştirilen yama herni onarımı ve açık transvezikal prostatektomi kombinasyonu ile tedavi edildi. Bu olgu sunumu, mesane hernisi ve BPH için kombine cerrahi yaklaşımlar hakkındaki sınırlı literatüre değerli bilgiler sunmakta ve ayrıca kompleks ürolojik olguların başarılı yönetiminde titiz preoperatif değerlendirme ve multidisipliner cerrahi planlamanın önemini vurgulamaktadır.
Anahtar kelimeler: Mesane hernisi; benign prostat hiperplazisi; skrotal kistosele; inguinal herni; tek insizyonlu cerrahi.

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INTRODUCTION

Bladder herniation is an uncommon condition, comprising approximately 1-4% of all inguinal hernias (1). It predominantly affects older males and occurs more frequently (60-70%) on the right side (2). While often asymptomatic, it may present with voiding difficulties, inguinal swelling, and urinary retention, particularly in cases of infravesical obstruction. The anatomical pathways through which bladder herniation may occur include the femoral canal, the abdominal wall, the perineum, and

the obturator foramen. Depending on its relationship with the peritoneum, it is classified into paraperitoneal (60%), intraperitoneal (30%), and extraperitoneal (10%) types (3). Extraperitoneal herniation, as evidenced in the present case, is devoid of any connection with the peritoneum and can pose significant diagnostic and surgical challenges.

Potential complications of bladder herniation include bilateral hydronephrosis (10-15%), vesicoureteral reflux (5-10%), bladder necrosis (3-5%), scrotal abscess, and, in rare instances, bladder carcinoma (4,5). Bladder carcinoma sometimes occurs with herniation, but there is no proof that this is the result of the other condition. It is therefore vital that early diagnosis and appropriate management are implemented. This case report aimed to present a rare case of extraperitoneal bladder herniation accompanied by significant benign prostatic hyperplasia (BPH), managed effectively with a combined surgical approach in detail. Inguinal bladder herniations can occur via direct or indirect pathways. In this case, the herniation followed a direct inguinal route, which is consistent with extraperitoneal extension.

CASE REPORT

A 70-year-old male patient was admitted with a complaint of pain and swelling in the right inguinal region. His past medical history included bilateral inguinal mesh hernia repairs. Upon examination, a reducible inguinal mass was palpated. Contrast-enhanced computed tomography (CT) of the abdomen and pelvis confirmed bladder herniation into the right inguinal canal (Figures 1 and 3). Uroflowmetry revealed a Q_{max} of 4 ml/s, a bladder capacity of 320 ml, and a post-void residual urine volume of 180 ml. The prostate volume was measured at 110 mL, and the prostate-specific antigen (PSA) level was recorded at 0.9 ng/mL. The international prostate symptom score (IPSS) was 24, indicating severe lower urinary tract symptoms. The patient exhibited no significant comorbidities, including diabetes mellitus or neurological disorders, and did not necessitate preoperative urodynamic evaluation.

The initial surgical intervention, an open transvesical prostatectomy, was performed by the urology team through a single lower transverse incision (comparable to a modified Pfannenstiel approach). Consequently, the general surgery team proceeded with the mesh hernia repair procedure, utilizing the same incision to insert a mesh. Intraoperatively, the herniated bladder segment was visualized and successfully reduced. The mesh repair was then completed by the general surgeons (Figures 2 and 4). Consequently, the urology team performed the open transvesical prostatectomy. The postoperative course was uneventful. Subsequent uroflowmetry revealed enhanced parameters (Q_{max}: 15 ml/s, residual urine: 30 ml), accompanied by the resolution of the patient's symptoms.

DISCUSSION

Bladder herniation frequently remains undiagnosed prior to surgery due to its asymptomatic nature. However, when symptomatic, patients may exhibit signs such as inguinal swelling that decreases post-voiding – a hallmark known as Mery's sign (1). The patient in question exhibited obstructive lower urinary tract symptoms (LUTS) and right inguinal swelling, which were later attributed to coexisting BPH and bladder herniation.

Figure 1. Axial CT demonstrating a right-sided inguinal bladder herniation (red arrow) with centrally located prostatic enlargement

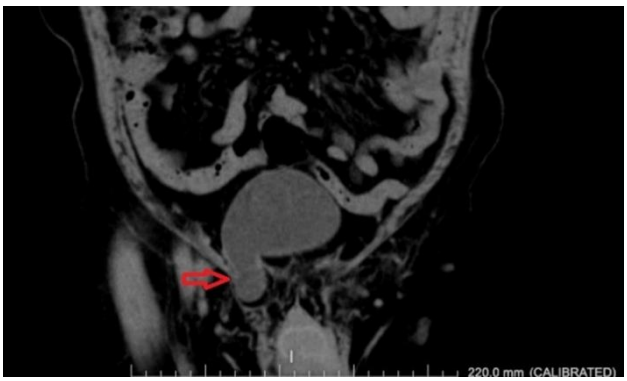

Figure 2. Coronal CT demonstrating a right-sided inguinal bladder herniation (red arrow) extending into the inguinal canal and prominent prostatic hypertrophy inferior to the bladder

Figure 3. Postoperative axial CT showing absence of bladder protrusion into the inguinal canal (white arrow), indicating successful surgical intervention

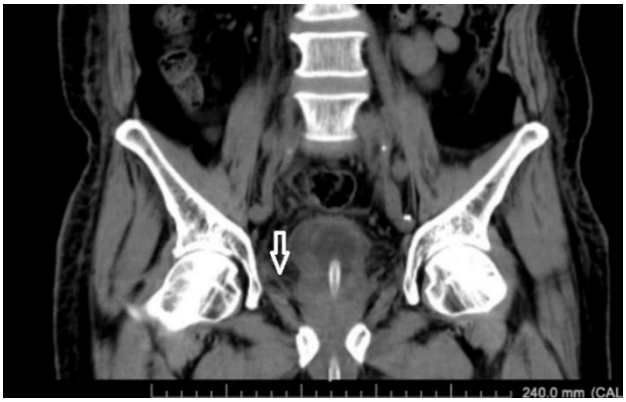

Figure 4. Postoperative coronal CT showing the resolution of right-sided bladder herniation (white arrow) following a combination of mesh repair and open transvesical prostatectomy

BPH has been demonstrated to increase intravesical pressure, potentially weakening the bladder wall and predisposing it to herniation (4). Chronic bladder overdistension and pressure transmission to the anterior abdominal wall further contribute to this pathology (6). BPH-related bladder outlet obstruction increases pressure in the bladder, which can cause bladder wall protrusion through areas of weakness, such as the inguinal canal. Even without other issues, the bladder's position can contribute to voiding dysfunction and a high post-void residual volume. In such cases, it is considered optimal to address both the obstruction and the herniation in a single surgical session.

Imaging modalities such as ultrasonography, cystography, and CT scans are crucial for diagnosis. CT is particularly effective in identifying bladder herniation and coexisting pathologies like BPH, as seen in the present case. The utilization of prompt imaging facilitates preoperative planning and the prevention of intraoperative complications (7).

The standard surgical management of inguinal bladder herniation involves mesh hernia repair, with or without bladder resection. Although some reports mention partial bladder removal in cases with necrosis or incarceration (8), avoid this unless absolutely necessary. There was no ischemia or necrosis observed intraoperatively, so bladder preservation was ensured. Inguinal bladder hernias are classified as direct or indirect. Direct hernias protrude through Hesselbach's triangle due to a weakness in the posterior wall of the inguinal canal. Indirect hernias follow the path of the spermatic cord through the deep inguinal ring (9). The Lichtenstein and Bassini techniques are widely utilized for mesh due to their low recurrence rates and high success in preserving anatomical integrity (10). The Lichtenstein mesh hernia repair was used in this case to avoid tension. Both Lichtenstein and Bassini repairs are commonly used in cases of bladder herniation, and Lichtenstein is known for reducing the likelihood of recurrence and improving tissue integration. It is imperative to exercise caution during the procedure to prevent bladder injury. In order to minimize the risk of complications related to the mesh, strict aseptic techniques were employed during the procedure, and no contamination was observed intraoperatively.

Inguinal bladder herniation can cause lower urinary tract dysfunction even when there is no blockage. The bladder can move into the inguinal canal, which can cause problems with bladder contraction and making the bladder empty. BPH can also make things worse by increasing pressure in the bladder and causing bladder wall hypertrophy, detrusor decompensation, and outlet resistance. When both conditions are present, as in our case, the symptoms can be very bad, and the bladder can not work well. So, it may be better to treat both conditions at the same time rather than doing them separately.

The simultaneous management of BPH and bladder herniation is an uncommon occurrence in the extant literature. This case exemplifies a safe and efficient approach using a single incision for both procedures. While there have been similar combined approaches documented, they remain underreported, underscoring the necessity for greater clinical awareness (11). Kazan et al. (12) reported a comparable case of massive inguinoscrotal bladder herniation, reinforcing the importance of preoperative diagnosis and tailored surgical management in such rare presentations. Bladder herniation must be considered when investigating recurrent inguinal hernias and lower urinary tract symptoms in elderly male patients. The success of surgery involving several specialists also shows the value of teamwork in complex urological cases.

CONCLUSION

It is imperative to consider bladder herniation in elderly patients with recurrent inguinal hernias and LUTS, particularly those with a history of BPH. Early diagnosis using CT imaging and coordinated surgical management is essential in such cases. The feasibility and benefits of performing mesh hernia repair and open transvesical prostatectomy through a single incision are well-documented, with a significant reduction in morbidity and improved patient outcomes. This case contributes valuable insights to the limited literature on combined surgical approaches for bladder herniation and BPH.

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