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Unilateral Scrotal Bladder Hernia: A Rare Case Treated with Laparoscopic Approach

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Abstract: Sliding hernia is a type of inguinal hernia in which the overlying organs and peritoneum form the wall of the hernia sac. Sliding hernia of bladder is a rare case and often found incidentally. We reported a 72-year-old man presented with a lump on the right thigh that reached the right scrotum six days before admission. The lump could not be re-entered and was accompanied by intermittent pain. The patient also complained of difficulty in spontaneous micturition and bloody urine. The patient had a history of vesicolithiasis and transurethral resection of the prostate (TURP) for benign prostate hyperplasia. Physical examination revealed a non-displaced right inguinal to right scrotal lump with tenderness. The patient's clinical features and risk factors favoured the diagnosis of sliding hernia of bladder. Haematological examination revealed leucocytosis and anaemia and the CT-Scan showed right scrotal bladder hernia. The patient underwent laparoscopic hernia repair with mesh and omenthopexy. The patient's clinical condition improved and the patient was discharged. Often patients with such condition are asymptomatic or have non-specific symptoms. Some radiological examinations can help make the diagnosis, albeit, few diagnoses are made preoperatively. Management of sliding hernia of bladder is vesical urinary repositioning or resection based on the patient's clinical condition. In conclusion, clinicians should consider sliding hernia of bladder as a differential diagnosis of inguinal hernia. Preoperative diagnosis can help achieve an accurate diagnosis, minimise complications, and safer management.
Keywords: hernia; sliding hernia; bladder

INTRODUCTION

Inguinal hernias are common but vesical urinary herniation is rare, occurring in only 0.5 - 5% of inguinal hernia cases.[1] A vesical urinary hernia or bladder hernia is a condition in which the entire wall of the bladder passes into the inguinal canal.[2] This condition was first discovered by Bernard Levine in 1951 as a scrotal cystocele to describe an inguinal-scrotal bladder hernia. It occurs more common in men over 50 years of age. However, most patients are asymptomatic and the diagnosis is made incidentally through radiological examination or intraoperatively during hernia surgery.[3,4]

Sliding hernia is a form of inguinal hernia in which the overlying organs and peritoneum will form the wall of the hernia sac.[5,6] Although sliding hernia of bladder is a rare case but clinicians need to be aware of this condition. Therefore, a preoperative diagnosis can be made, so that, appropriate surgical management can be carried out and can prevent delays in the therapy and complications.

CASE REPORT

A 72-year-old man presented with a lump on the right thigh that reached the right scrotum six days before admission. The lump could not be re-entered and was accompanied by intermittent pain. The patient also complained of difficulty urinating spontaneously, so that, he needed to strain and found bloody urine. Therefore, the patient currently used a urinary catheter since 17 February 2025. The difficulty in spontaneous micturition began after the patient removed the urinary catheter after transurethral resection of the prostate (TURP) for benign prostate hyperplasia (BPH) on 14 February 2025. The patient also underwent vesicolithiasis surgery in December 2024. Other complaints and history of chronic diseases were denied.

Physical examination revealed a lump on the right inguinal to right scrotum that could not be inserted accompanied by tenderness (Figure 1). The patient underwent haematological examination that revealed leucocytosis and anaemia. Clinical signs found when the patient came to the emergency room from anamnesis obtained no signs of obstruction, in the form of nausea and vomiting were not found, the patient could still fart and defecate and the stomach was not bloated. On physical examination the abdomen appeared calm, normal bowel noise, finger test and thumb test were not found. Axial and sagittal abdominal CT Scan images showed right scrotal bladder hernia.

The history and physical examination supported the diagnosis of sliding hernia of bladder, right orchidoepididymitis, and BPH post TURP. The patient's management was hernia repair with mesh insertion. The patient was in supine position with general anaesthesia and antisepsis procedures. The sub-umbilicus incision was deepened to reach the peritoneal fat. A 10 mm trocar was inserted followed by gas insufflation and 2 units of 5 mm trocar insertion. The right hernia pocket was exposed and reduction to the inguinal canal was performed, followed by hernia repair and mesh insertion. After hernia repair, omentopexy was performed and carbon dioxide gas and device were removed. After the hernia repair was completed, remove all the devices and suture the surgical wound layer by layer. The patient's condition improved well after the surgery.

Figure 1. Right inguinal palpable mass extending into the right scrotum

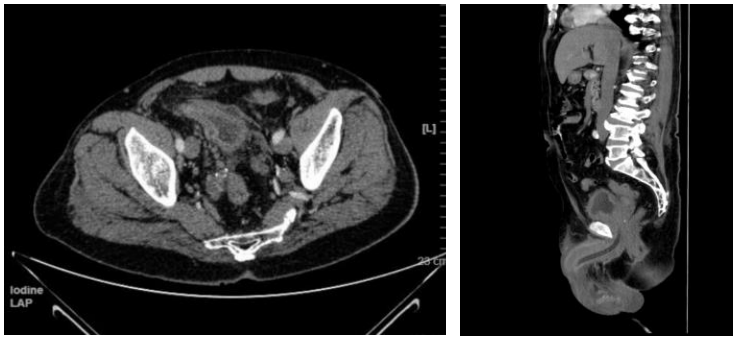

Figure 2. Axial and sagittal abdominal CT Scan images of right scrotal bladder hernia

DISCUSSION

Sliding hernias are herniations of retroperitoneal organs through the abdominal wall such as the caecum, ascending colon, sigmoid colon, ureter, and bladder. These hernias can be unilateral or bilateral, direct or indirect. The incidence of bladder hernia is estimated to be only 1-4% of adult inguinal hernias, more common in men than women in the age group above 50 years. Most cases occur on the right side.[2,3,5,7] Risk factors for urinary vesical hernias are urinary outlet obstruction, obesity, weakened vesical urinary tone and abdominal pelvic wall, increased intravesical pressure where most hernias are sliding inguinal direct hernias.[2,7] Benign prostate hyperplasia is also one of the herniogenic factors where the prevalence of inguinal hernias in patients with prostate adenoma is 16-25%.[3]

Patients generally do not have specific symptoms and this is the reason why the number of cases found preoperatively and during surgery are less than 10% and 20%, respectively. Patients generally present with a mass in the inguinal area that cannot be entered accompanied by symptoms of frequent micturition, difficulty micturition, urinary retention, intermittent urine output, and difficulty walking.[8-10] Another sign that can be found is Mery's sign where the patient has the same signs as an inguinal hernia but the hernia shrinks in size after the patient micturates. Another pathognomonic symptom is two-stage micturition, which requires compression of the enlarged scrotum to micturate.[1,11]

Preoperative ultrasonography and CT scan are useful for the diagnosis of scrotal vesical urinary hernia. Computed tomography (CT) can can identify hernia contents and complications. Cystography is required due to the high incidence of urological malignancies in patients with urinary vesical hernia (11.2%). Although many investigations can be performed, a definitive preoperative diagnosis can only be made in a small proportion of cases (under 7%) and most cases are diagnosed intra-operatively.[1,3,9]

The above literature is in accordance with this case where the patient was a male over 50 years old (72 years old) and the hernia occurred on the right side. A vesical urinary hernia may have occurred when the patient had BPH which can cause urinary outlet obstruction, one of the risk factors for vesical urinary hernia because after TURP was performed, the urinary catheter was removed and the patient still had difficulty micturition. In addition, the patient also had BPH which was one of the herniogenic factors. The symptoms of haematuria and the need to strain when micturition, so that, a catheter was inserted may be due to obstruction. A CT-scan revealed that the right side of the bladder wall had herniated through the right inguinal canal.

Management may involve repositioning the bladder into the pelvis or resection of the herniated portion of the bladder.[10] Anterior herniorraphy is still the gold standard approach for inguinal bladder hernias. There is no difference in the surgical technique of sliding hernia of bladder with common inguinal hernia performed with Litchenstein tension-free repair or open extraperitoneal repair surgery. The operation is performed with mesh insertion to prevent recurrence. Several studies have reported the effectiveness of laparoscopy with good outcomes except for a high conversion rate to open procedures of 10.8%.[2,9]

Laparoscopy in urinary vesical hernia has two techniques namely transabdominal pre-peritoneal (TAPP) and total extraperitoneal (TEP). In this patient, the TEP technique was preferred due to direct access to the preperitoneal space without entering the abdominal cavity in which case the peritoneum remained intact, visualisation was limited to the preperitoneal space, allowing extensive mesh placement to cover potential defects and smaller incisions resulting in better cosmetic results.[2,5]

Total extraperitoneal (TEP) technique for scrotal hernia repair with a bladder component contains several critical pitfalls. Firstly, the risk of bladder injury during dissection of the preperitoneal space is very high, especially if the bladder is attached to the hernia sac or there is a history of previous pelvic surgery; a protruding bladder may be mistaken for a fat hernia sac or lipoma, so blind dissection risks causing laceration. Secondly, it is difficult to identify the bladder defect intraoperatively due to limited visualisation of the preperitoneal space and the absence of

a direct view into the peritoneal cavity. Thirdly, incomplete reduction of the bladder component may lead to hernia recurrence or compression of the bladder by the mesh. Fourthly, if bladder injury occurs and goes undetected, urine leakage into the preperitoneal space risks causing peritonitis, sepsis or fistula formation. Fifthly, the use of thermal energy (electrocautery) near the bladder has the potential to cause delayed thermal injury whose symptoms appear later.[12]

In this case, the chosen management was vesical urinary repositioning. Resection was not performed as the patient had no indication for vesical urinary resection. Repositioning was performed with laparoscopic hernia repair using mesh to prevent recurrence. Laparoscopic technique was chosen as it has several advantages over anterior herniorraphy. Preoperative diagnosis is also established so that the diagnosis is more accurate and can minimise the risk of vesical urinary injury.

CONCLUSION

This case is a rare right-sided sliding vesical hernia in a 72-year-old male with benign prostate hypertrophy and urinary obstruction, successfully diagnosed preoperatively via CT-scan. Totally extraperitoneal (TEP) or transabdominal pre-peritoneal (TAPP) laparoscopic repair without bladder resection allows safe reduction and mesh placement, preventing recurrence and offering superior outcomes. Early diagnosis and tailored surgical planning are essential to minimize complications and ensure optimal results. Moreover, preoperative diagnosis can help achieve accurate diagnosis, minimised complications, and safer management.

Conflict of Interest

The authors affirm no conflict of interest in this study.

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