CASE REPORT

Inguinoscrotal Bladder Hernia with Cystolithiasis

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A hernia occurs when an organ or fatty tissue squeezes through a weak spot in surrounding muscle or connective tissue, called fascia. Hernia is classified as inguinal, incisional, femoral, umbilical, or hiatal. The bladder may herniate in 1%–3% of the cases through the inguinal canal. A herniated bladder with calculus is a more unique condition that has only 3 reported cases. Reported here is a case of a 65-year-old male with a known case of left bladder inguinal hernia. He presented with an inguinoscrotal bulge at the left groin and severe lower urinary tract symptoms, associated with a need to squeeze his scrotum to complete his voiding. A Computed Tomography scan revealed inguinoscrotal bladder hernia, left with urinary bladder calculi, and an enlarged prostate gland. The patient underwent cystoscopy, inguinal exploration left, cystolithotomy, hernioplasty left. Inguinoscrotal hernia of the bladder is a rare pathology and often goes unrecognized in during surgical hernia repair. Preoperative identification of bladder hernia is essential to prevent iatrogenic trauma and severe complications. It is mandatory for general surgeons and urologists to keep in mind this rare condition during surgical repair of inguinal hernia.

Keywords: hernia, bladder hernia, inguinoscrotal bladder hernia

Introduction

A hernia occurs when an organ or fatty tissue squeezes through a weak spot in a surrounding muscle or connective tissue called fascia. The most common types of hernia are inguinal, incisional, femoral, umbilical, and hiatal. In an inguinal hernia, an intraperitoneal organ protrudes to the abdominal wall or the inguinal canal. About 96% of all hernias are inguinal, and they occur mostly in men because of a natural weakness in the inguinal canal.

Inguinal bladder hernia (IBH) is a condition which was described first as scrotal cystocele. The bladder may herniate in one to 3% of the cases through the inguinal canal. Inguinoscrotal bladder hernias are difficult to diagnose. Seven percent are diagnosed preoperatively while 16% are diagnosed postoperatively.[1] Although few cases have been reported, IBH with calculi may also occur. Inage, et al. encountered a patient in whom bladder inguinal hernia was complicated by a bladder stone.[2] To date, there are only three cases published on online journals.

Presented here is the authors' experience with a case of bladder hernia with a stone.

The Case

This is a case of a 65-year-old male, with a known case of inguinal hernia left, who came in due to an irreducible left inguinoscrotal mass. The hernia was first diagnosed 5 years ago, and he was

advised for surgery but did not comply. During urination, he squeezes his scrotum in order to empty the bladder. The patient has a BMI of 32 kg/m^2. On physical examination, there was a palpable mass on his left scrotum, soft, reducible, non-tender with a movable solid component with an estimated size of 2cm x 2cm (Figure 1). His abdomen was soft, non-tender, and had normo-active bowel sounds. On digital rectal examination, his prostate gland was approximately 40 grams, non-nodular, non-tender, firm, and movable. Ultrasound of the kidneys, ureters, urinary bladder and prostate, including the inguinoscrotal area, showed normal kidneys and ureters, a prostate size of 45 grams, normal-appearing testes and epididymis, and hydrocele of the left scrotum. The ultrasound also showed an inguinal hernia in the left side. Herniation of a portion of the urinary bladder containing a 2cm x 3cm stone was considered. Computed tomography (CT) scan was done which revealed an inguinoscrotal bladder hernia containing a cystolithiasis measuring 3cm x 3cm. The stone had a Hounsfield unit (HU) measurement of 980. Calcifications and dilatations were absent in the kidneys and the collecting system bilaterally (Figure 2).

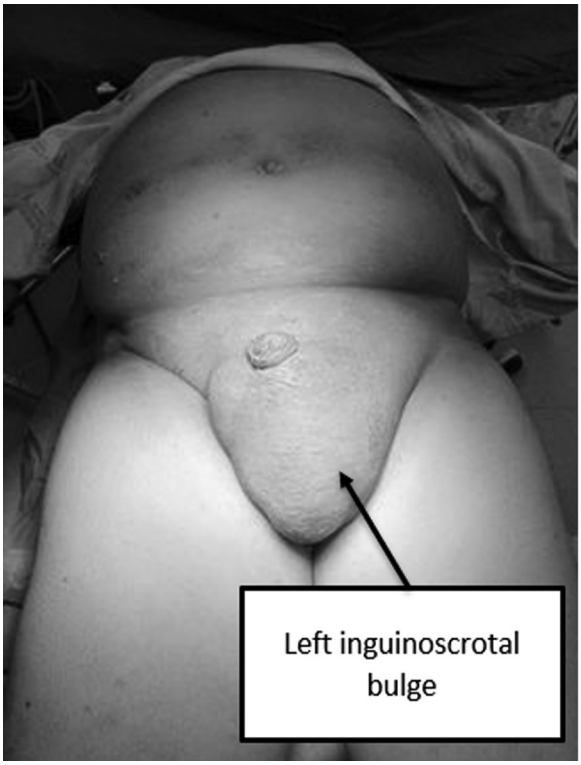

Figure 1. Pre-operative image of the patient showing a left inguinoscrotal bulge

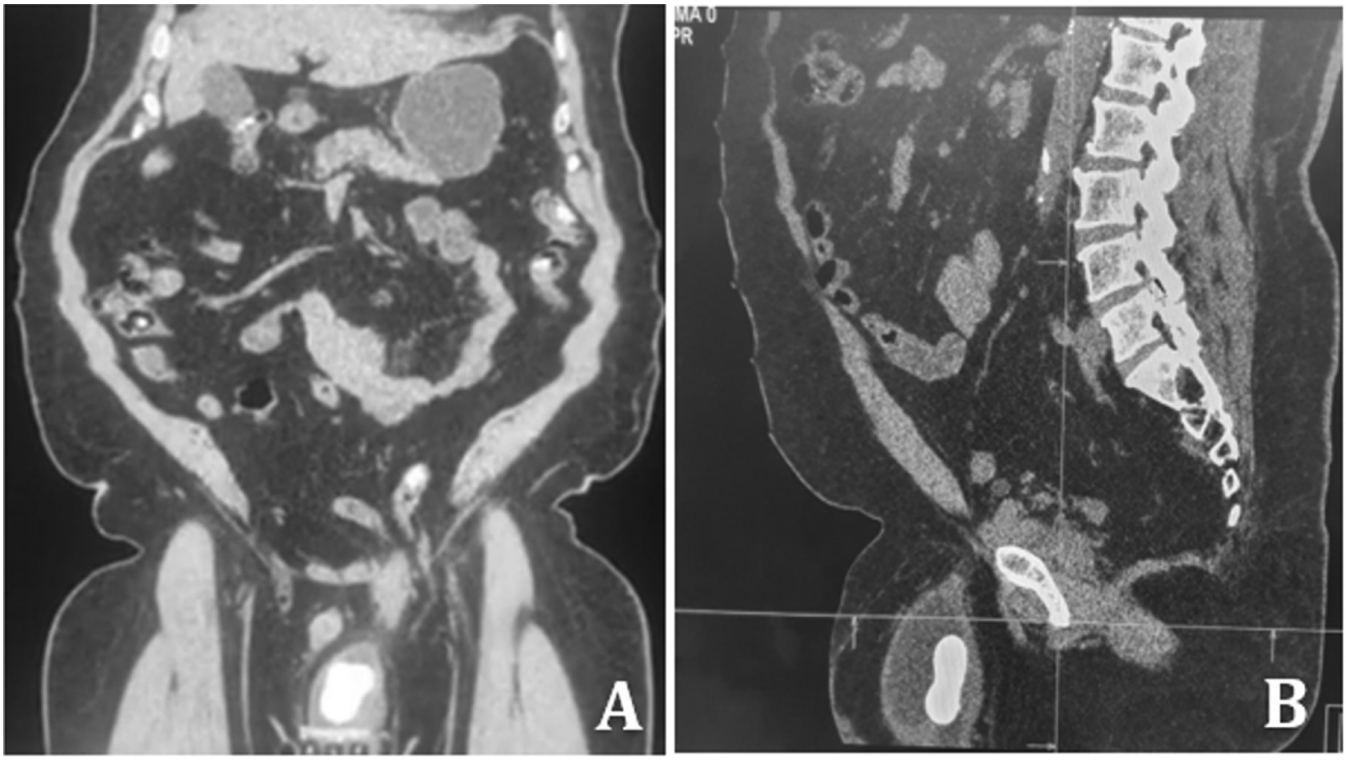

Figure 2. Axial (A) and Sagittal (B) views of CT scan image showing IBH left, with cystolithiasis

The patient underwent cystoscopy, inguinoscrotal exploration left, cystolithotomy, and hernioplasty left. On cystoscopy, the bladder was not visualized beyond the bladder neck. Intraoperative findings on Inguinal exploration revealed an indirect Inguinoscrotal hernia within which the urinary bladder was incarcerated (Figure 3). Manual reduction of the herniated bladder was attempted, but was unsuccessful because of the presence of the large stone. Hence, cystolithotomy was done. After the extraction of the stone, the herniated bladder was reduced to its normal pelvic position. An intraoperative picture of the stone (Figure 4A) and a picture after extraction (Figure 4B) are shown in Figure 4. The inguinal hernia was repaired using the Lichtenstein technique to prevent recurrence. The post-operative course was uneventful. The patient was discharged on the third post-operative day. Thereafter, he was advised for transurethral resection of the prostate.

Discussion

Inguinal hernias are either congenital or acquired. Evidence suggests that genetics play an important role in developing a hernia. In an article by Hammoud, et al., patients with a family history of inguinal hernia are four times more likely to have the disorder.[3] A hernia may contain intra-abdominal or extra-peritoneal organs. In some cases, the urinary bladder may present as an inguinoscrotal bulge. Inguinal herniation of the bladder, or scrotal cystocele, comprises only 1-3% of all inguinal hernias. According to Taskova, et al. the incidence of IBH is more common in obese males, aged 50 or more years, with lower urinary tract symptoms.[4] Moufid, et al. identified some factors that can contribute to bladder herniation. These include chronic urinary obstruction, obesity, decreased

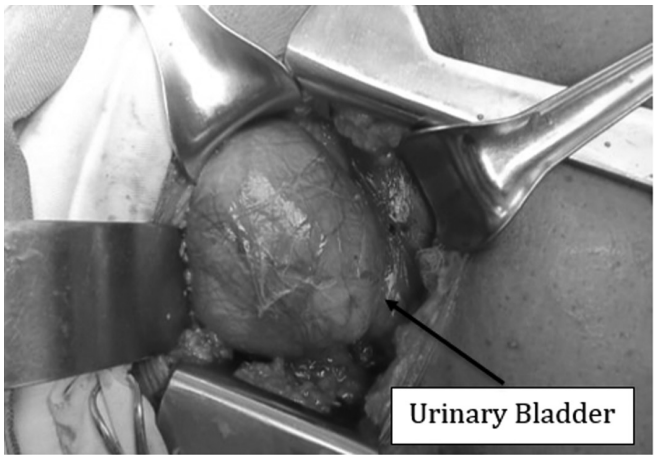

Figure 3. Urinary bladder, incarcerated on left inguinal area.

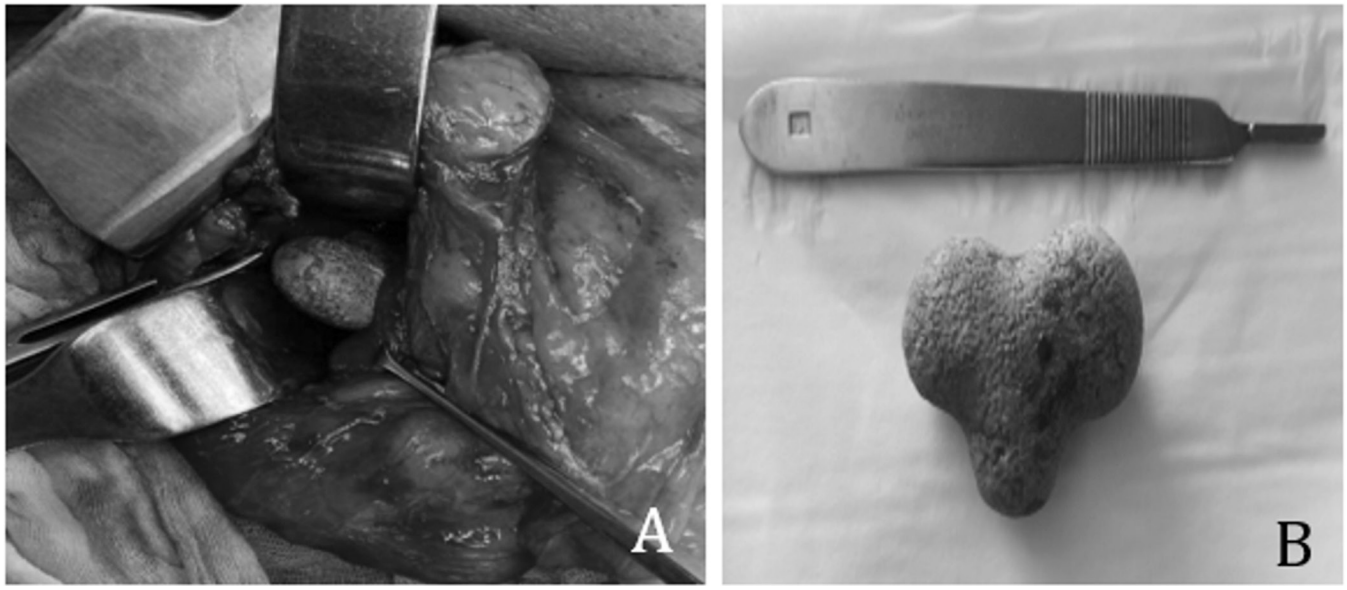

Figure 4. Intraoperative cystolithotomy incision showing the 3cm x 3cm intravesical stone (A) and the structure of the stone after extraction.

bladder tone, weakness of the pelvic musculature, chronic obstructive pulmonary disease and benign prostrate hypertrophy (BPH).[5] Patients with inguinal bladder hernias have been described to present with difficulty in urination, urinating in two-stages (squeezing the scrotum to empty the bladder), and an inguinoscrotal bulge. This type of hernia can be due to lower urinary tract symptoms caused by a benign prostatic hyperplasia. All reported cases of inguinal bladder hernia complicated by a bladder stone have been described to have notable lower urinary tract symptoms and had to utilize a two-stage urination.[2,4-7]

Pre-operative diagnosis of this type of hernia is essential to avoid complications during surgery. According to Zaslau, et al. a thorough physical examination and detailed history are essential in the diagnosis of this disorder.[7] Proper imaging is also necessary to confirm the presence of inguinoscrotal bladder hernia and cystolithiasis. Branchu, et al. suggested that a CT scan with contrast should be requested to avoid doing multiple imaging studies.[8]

The treatment of IBH is either reduction or resection of the herniated bladder followed by herniorrhaphy. Two of the three cases that have been reported, underwent reduction of the herniated bladder followed by cystolithotripsy. In the third case, a cystolithotomy was performed after inguinal exploration. In the case of the patient in the present report, cystolithotomy was done followed by reduction of the herniated bladder, and then hernioplasty.

In a systematic review done by Branchu, et al. the most common complications reported were bladder injury and peritonitis.[8] Complications were seen in patients who did not have imaging before the surgery, and in cases wherein the bladder hernia was not recognized during physical examination prior to surgery. Moufid, et al. added that complications of inguinoscrotal bladder hernia include vesicoureteric reflux, bladder rupture, hydronephrosis and strangulation which may lead to ischemia and bladder infarction.[5]

In summary, IBH is a rare pathology and is often unrecognized during surgical hernia repair. The use of scrotal pressure during voiding in patients over 50 years is a specific sign for urinary bladder in the hernia. Urinary retention associated with herniation of the bladder increases risk for stone formation. Accurate diagnosis can be readily established radiologically and/or with cystoscopy. Preoperative identification of IBH is essential to prevent iatrogenic trauma or even severe complications. Surgeons and urologists must be aware of this rare condition. In general, a concomitant enlargement of the prostate should be treated surgically to avoid recurrence of hernia.

References

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