
CLINICAL CASE

ABOUT A LARGE INGUINAL BLADDER HERNIA– CASE REPORT AND LITERATURE REVIEW

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ABSTRACT

Inguinal bladder hernia (IBH) is a rare condition: the urinary bladder is involved in no more than 5 % of all groin hernias. This variety of sliding hernia is usually asymptomatic and occurs in men aged over 50 years and can incidentally be encountered during hernia repair. Herein we re-report a case of a large symptomatic IBH, containing almost whole urinary bladder and successfully treated via open hernia repair using a technique described by Celdran. This entity of hernia should be suspected when inguinoscrotal hernia is associated with urinary symptoms. We emphasize the importance of the preoperative diagnosis in order to reduce inadvertent lesions of the bladder or ureters during hernia surgery.

KEYWORDS: *Inguinal bladder hernia, sliding hernia, Stoppa, Celdran, Mery's sign*

INTRODUCTION

Inguinal bladder hernia (IBH) is a rare entity (no more than 5 % of all groin hernias) and untreated it can lead to major complications, the most feared being multiple organ system failure [1]. This variety of sliding hernia is usually asymptomatic and occurs in men aged over 50 years and can incidentally be encountered during hernia repair [2]. It should be suspected when inguinoscrotal hernia is associated with urinary symptoms. One of the objectives in treatment of IBH is reducing the bladder to its native position in the Retzius space, followed by hernia cure [3]. We present a case of a IBH along with literature review. The patient was discovered during medical examination for two-stage urination (Mery's sign), wherein the computed

tomography (CT) scan present-ed a large aspect of the urinary bladder herniated in the inguinal canal. It was successfully treat-ed via open surgery using a tension free heavy-weight mesh hernia repair technique. We emphasize the importance of preoperative diagnosis in order to reduce iatrogene lesions of the bladder or ureters during hernia surgery. This study is compliant with SCARE Guidelines [1].

CASE PRESENTATION

We present the case of 68 years obese (BMI – 33 kg/m²) male, with a medical history of chronic obstructive pulmonary disease and newly discovered diabetes mellitus. During medical examination, right inguino-scrotal hernia was detected; the patient complained of

frequent and two-stage urination. A CT scan was performed and the large inguinal bladder hernia on the right side was demonstrated (Figure 1). Urinalysis and urine culture were normal. PSA levels were normal. Cystoscopy noted the large

herniation of bladder with no other lesions. The patient was addressed to our department for further investigation and treatment. Written informed consent was obtained from the patient.

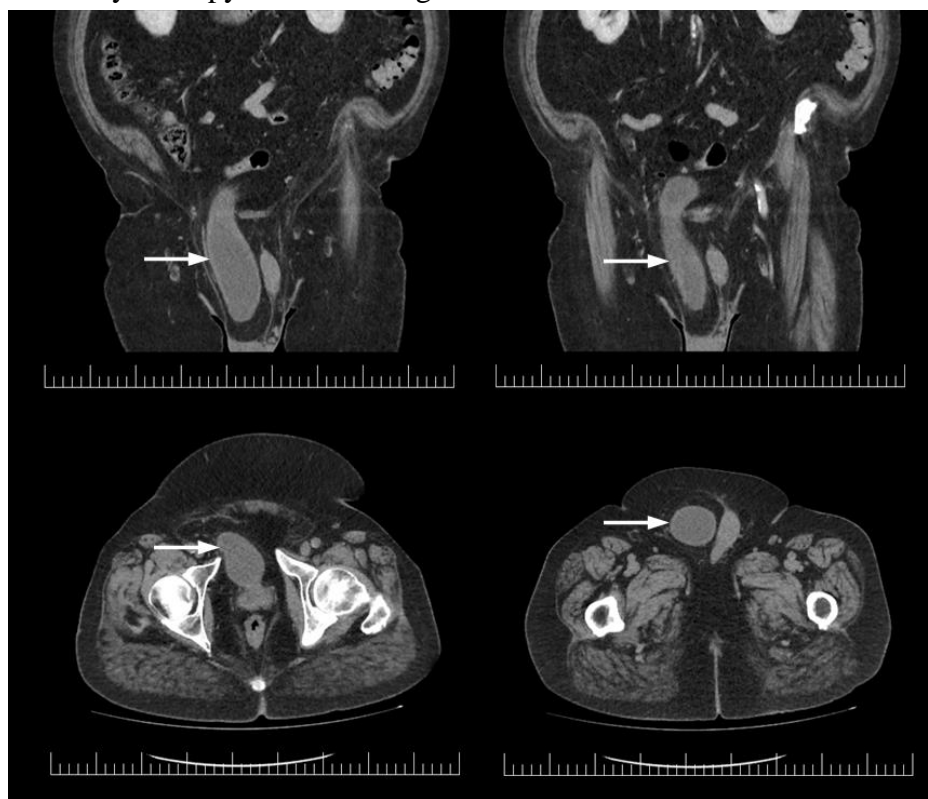


Figure 1 - CT scan. The urinary bladder (white arrow) is herniated in the right scrotum. There was no obstruction of the ureters. No bladder mass was present.

The surgery was performed under spinal anesthesia. Urethral catheter 18 Ch was placed. Intraoperative findings demonstrated indirect inguinal hernia with the whole bladder sliding in the hernia, not being covered by peritoneum. The bladder was dissected off the spermatic cord and returned to its normal pelvic position without resection. We opted for tension free repair and used heavy-weight mesh.

The procedure was similar to the Celdran et. al technique, with the mesh prepared (Figure 2) to accommodate the entire myopectineal orifice [2]. The mesh was fixated to Cooper's ligament and inguinal ligament. A drainage tube was also placed.

The patient had uneventful postoperative course. Drain was removed 48h postoperatively and patient discharged. Urethral catheter was held in place for 7 days, according to urological advice.

At follow up 2 weeks postoperatively, the urological symptoms alleviated. Cystoscopy

performed demonstrated normal bladder. 1,3, 6 months follow-up showed no signs of hernia recurrence.

DISCUSSION

Most of the inguino-vesical hernias are asymptomatic, but in some instances low urinary tract symptoms (LUTS) may be present. In large hernias, wherein a large part of the bladder is involved, patients can evoke a specific sign: Mery's sign, that implies two-stage micturition – initial manual compression of hernia followed by bladder voiding [3-5]. Some other symptoms include hematuria, frequent and nocturnal urination, recurrent urinary infection [5].

There are multiple causes that favor apparition of IBH: bladder outlet obstruction found in benign prostatic hyperplasia (BPH), urethral strictures, chronic bladder distension, diminished bladder tone, obesity [6], pelvic musculature weakness [3].

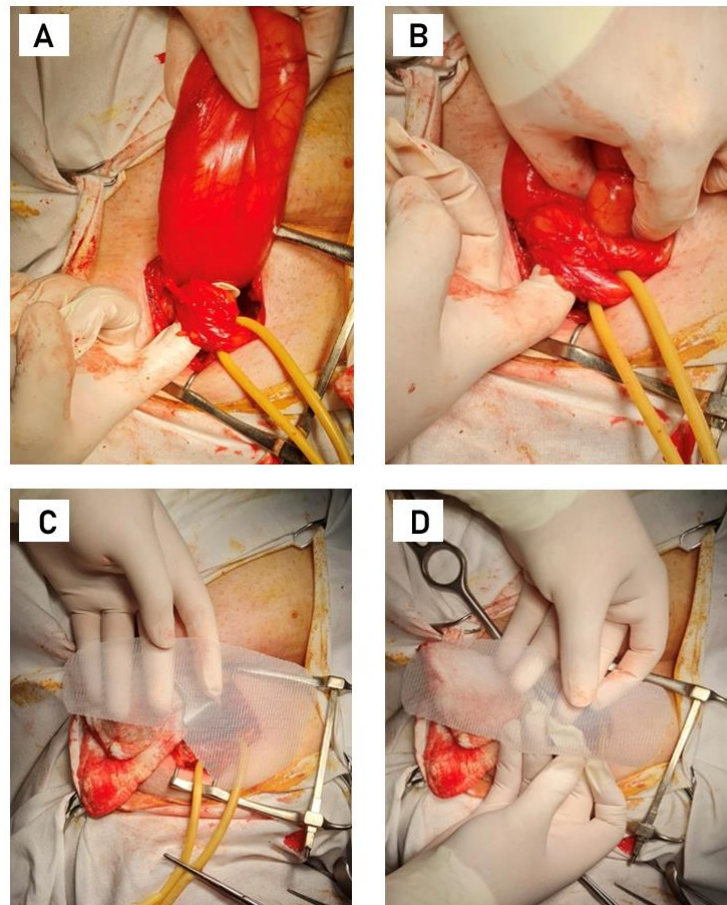


Figure 2 - Intraoperative aspect. A- the bladder is dissected off the spermatic cord and evaluated for lesions. B – bladder is reduced in normal position. C, D – mesh trim according to Celdran et al. [1]

Local trauma or previous surgery can be also involved in the pathophysiology of IBH. There is data suggesting that IBH can also be noted in hernia recurrence after open hernioplasty [7].

It was found that IBH may also be associated with BPH, stones in the herniated bladder, vesicoureteral reflux, prostatic or bladder cancer [8,9], hence when these are suspected, thoroughly examination is required. More than 10% of patients with IBH can present urological malignancies [10]. Therefore, urological consultation is important in the management of IBH [11].

Left untreated, IBH may develop complications: urinary retention [12], bilateral hydronephrosis with or without renal impairment [13], acute renal injury [14], bladder necrosis, scrotal abscess, sepsis [15], multiple organ system failure, etc.

Regarding the types of IBH, three entities are described: paraperitoneal, intraperitoneal and extraperitoneal, according to the relationship to

the peritoneum. The paraperitoneal type is the most often, in which the extraperitoneal urinary bladder goes medial to the peritoneal sac. Extraperitoneal type is the least common, describing the urinary bladder not being covered by peritoneum. Intraperitoneal type presents the whole bladder within the peritoneal sac [16].

Diagnosis can be made by ultrasound but retrograde cystography appears optimal– easy to perform and reliable for diagnosis; intravenous pyelography; computed tomography (CT). Diagnostic triad on pyelography: incomplete urinary bladder base visualization, small and asymmetric bladder, lateral displacement of the distal third of the ureter [17]. Cystography can demonstrate a ‘dog-ear’ or ‘dumbbell’ shaped bladder [18]. Ultrasound findings: fluid-filled mass in the scrotum, hypoechoic mass extending from the bladder to the scrotum [2, 19]. CT gives additional information on associated bowel involvement and hydronephrosis, excludes malignancies and helps the surgeon plan the surgery [20]. We stress that cystoscopy is an

essential tool in completion of diagnosis [18]; we also highlight that complications after hernia surgery can lead to the diagnosis of IBH [5].

It is important to emphasize the importance of preoperative urethral catheterization to reduce the inadvertent injury of the bladder or ureters.

When a bladder hernia is suspected intraoperatively, bladder filling/insufflation via Foley catheter is useful for diagnosis. One can use saline fluid or methylene blue [21]. This method can delineate anatomy and avoid lesions.

One of the objectives in treatment of IBH is reducing the bladder to its native position in the Retzius space, followed by hernia cure. The resection can be necessary when bladder necrosis is encountered; also, bladder diverticula, narrow hernia neck, bladder tumor in the herniated bladder – for these situations, partial cystectomy is performed [12,16]. It is necessary to identify the vesicoureteral junction to decrease the possible ureter injury. In managing such complex cases, a urologist should join the general surgeon in the preoperative plan and also in the operating theatre [11].

In selected patients (asymptomatic), non-operative management it is considered an option when associated with intermittent urinary catheterization [22].

In the case of preoperative misdiagnose, there is a risk of bladder lesion in hernia surgery, as the studies report [23]. Also, there is important to emphasize that in most situations the diagnosis of IBH was made intraoperatively [3,5]. Interestingly, bladder injury and leakage diagnosed, in 16% of cases, IBH postoperatively [10].

Risk factors of IBH include male gender, obesity, older age, long history of inguinal hernia. When urinary symptoms or the presence of urinary pathology is noted, further evaluation is mandatory. Similarly, in large inguinoscrotal hernias we encourage the recommendation of CT scan prior to surgery [3]. One can suggest that clinical examination can diagnose this type of sliding hernia, but symptoms are usually not specific [24]; one exception to this is Mery's sign (voiding when manual pressure is exerted on

hernia), which we consider to be a valuable tool to aid in the diagnosis of IBH.

Preoperative diagnosis of bladder hernia could decrease the risk of injury of the bladder; bladder injuries are reported by some authors during hernia surgical repair [3, 25, 26]. Peritonitis was also described [27]. Cystoraphy and urethral catheterization for 7 days yielded good results in the management of lesions [26,28].

We advocate holding the urinary catheter in place postoperatively for 7 days to facilitate tissue healing and mesh integration [29].

When a preoperative diagnosis of IBH is made, laparoscopic approach can be considered. Some authors show that anterior approach has more recurrence than posterior approach [30]. Laparoscopic total extraperitoneal approach has the benefit of improved visibility [6], but in case of large incarcerated IBH, the dissection area is narrowed and risk of bladder lesion is higher; there are reported conversions to open surgery due to challenging anatomy. The number of cases that used laparoscopic approach is small [20].

Open approach was the most common according to literature, some authors suggest Bassini repair [10, 31] – one argument is that in case of accidental bladder injury, mesh repair is controversial [18], due to presence of urine in the operative field. When partial cystectomy is performed, use of mesh is a matter of controversy. Lichtenstein technique was also described by others [32] in repairing IBH. The Stoppa procedure may be another option [4]. Some authors favor laparoscopic technique [33]; robotic approach was also described [34].

For the case presented, we used a technique presented by Celdran et al., using a tailored polypropylene mesh placed in the properitoneal space, with Cooper fixation [10]. The outcome was favorable and hence we support this approach. There are many reports of IBH with no mesh surgery [10, 27, 31], but we encourage the use of mesh in repair of IBH, whenever possible.

Regarding follow-up after IBH repair, we subscribe to Cybulka et al. [25] and recommend cystoscopy postoperatively; this is mandatory when partial cystectomy was made. Also, follow-up cystography is another option [35].

CONCLUSION

Diagnosis is an important step in the inguinal bladder hernia management, and we emphasize the main symptom as two stage urination (Mery's sign). Regarding hernia repair in this instance: mesh repair appears to be the best option, but care should be undertaken when contaminated field is encountered. We encourage the placement of mesh in the properitoneal space, in a fashion similar to the Celdran indication.

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