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## Inguinal hernia containing urinary bladder—A case report

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## ABSTRACT

**INTRODUCTION:** Inguinal bladder hernia is rare condition found in about 1–5% of inguinal hernias. The condition is usually diagnosed intraoperatively. Patients rarely have symptoms regarding urinary tract. The best management is surgical, open surgical technique is preferred over laparoscopic. Possible urinary tract damage during surgery should be recognized and resolved.

**CASE PRESENTATION:** The following paper presents case of inguinal bladder hernia in 82-year old Caucasian male. Patient presented at our emergency department with incarcerated left inguinal hernia. Preoperative ultrasound has shown small bowel loop inside hernia sac. The condition was diagnosed intraoperatively – the whole bladder was found inside hernia sac. During surgery minor damage of the bladder was caused and repaired. Hernia defect was repaired using Bassini hernioplasty.

**DISCUSSION:** Elderly male more often present with inguinal bladder hernia. Sometimes urinary malignancy may be cause for inguinal bladder hernia. In cases where inguinal bladder is found inside hernia sac, urologist should be consulted to exclude urological pathology. Surgical treatment is indicated in all symptomatic patients. Patients with small, asymptomatic inguinal bladder hernias could be treated conservatively.

**CONCLUSION:** Physicians seeing patients with inguinal hernia should be aware that patient may have inguinal bladder hernia, especially in patients presenting with newly developed symptoms of lower urinary tract.

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## 1. Introduction

Inguinal bladder hernia (IBH) is rare condition. Urinary bladder is found in 1–5% of inguinal hernias (IH), most data reporting 1–3% [1,2]. Incidence is higher (about 10%) in obese males, aged  $\geq 50$  years [2]. Hernia sac could contain any portion of bladder (diverticulum, part of bladder, ureter or entire bladder). Condition where bladder is found in inguinoscrotal hernia sac is referred as scrotal cystocele [1]. The first case was described in 1951 by Levine [3]. Patients may present with urinary retention or complain of double voiding [2]. Careful physical examination is essential [1]. Diagnosis is confirmed with ultrasonography (US) and cystography [2]. Most cases are diagnosed intraoperatively [3]. Open surgical repair is preferred [1,2].

The following paper presents a case of patient with inguinal swelling which was described as incarcerated small bowel loop

on US. During surgical repair the whole bladder was found inside hernia sac.

The work has been reported in line with the SCARE criteria [4].

## 2. Case report

82-year old Caucasian male presented at our University hospital emergency department (ED) with left inguinal swelling. Two days prior to the visit the swelling had become painful. He reported nausea, vomiting, difficulties with micturition (difficulties with initiation of micturition and feeling of full bladder after micturition) and denied fever. He had been constipated for two days; he had not passed flatus for two days.

On the day of examination US of left inguinal region was done, incarcerated left inguinal hernia (LIH) was described, containing aperistaltic small intestine loops without dilatation.

Patient had comorbidities – gastroesophageal reflux disease and chronic obstructive pulmonary disease, without previous history of surgical procedures.

Clinically irreducible LIH was found, painful on palpation, size 10 × 8 cm. Skin above the hernia was without signs of inflammation.

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Peristalsis was auscultatory weak. Abdomen was not painful on palpation. Costovertebral angle tenderness was absent.

Patient was admitted on the ward and operated on at the date of admission. Before operation he signed informed consent regarding operation and use of data in academic and research purposes. Preoperatively he received 2 g of cefazolin (Cefamezin®). Urinary catheter CH16 was inserted without difficulties. Abdominal surgery specialist with 5 years' experience performed the operation. Left parainguinal incision was made. Left inguinal canal was explored. Inside hernia sac urinary bladder and small bowel loop were found. Small deserosation of urinary bladder was made. Small bowel loop was vital. Urologist was consulted regarding bladder and defect was repaired with Vicryl® suture. Bladder was repositioned to its anatomical position. Hernia defect was repaired using Bassini technique. Lower medial laparotomy was made. The small bowel loop that was incarcerated in hernia sac was vital. Abdominal cavity was irrigated with saline. Abdominal drainage was inserted. Peritoneum was fixed on the bladder with single sutures. Laparotomy was closed with single Vicryl® sutures. Skin in the area of lower median laparotomy was closed with staples.

Patient was satisfied; operation and post-operative recovery were uneventful. He was released asymptomatic regarding urination and was advised about wound care, removal of suturing material. He was advised to avoid intensive physical activity and lifting heavy objects for 2 months.

### 3. Discussion

Right IH is more common, males being 10 times more affected [5]. Direct right IBH is more common [2]. Study from 2004 has shown that 11.2% of IBHs were associated with urologic malignancies and 23.5% were associated with a variety of complications [3,6].

Pathophysiology may be related to bladder outlet obstruction (BOO), chronically distended bladder, decreased bladder tone, obesity and weakness of pelvic floor muscles [2,3]. Usually there is BOO which leads to bladder distension. In combination with weakening of abdominal and bladder wall the bladder slides through dilated inguinal ring [7]. There are reports of ureter herniating into hernia sac with the bladder or independently. In such case patient may present with hydronephrosis, rarely with renal failure [2].

Small IBH is usually asymptomatic. Large IBH usually presents with swelling in the groin or/and scrotum and LUTS. LUTS are usually due to bladder obstruction or infection. It may also present with dual voiding [2]. At first stage micturition involving natural bladder emptying is present. In the second stage voiding is possible by manual compression of the hernia [2,3].

Most IBHs (77%) are diagnosed intraoperatively, 7% preoperatively and 16% postoperatively due to complications [3,6]. Different diagnostic modalities may be used [6]. US is first and most accessible diagnostic modality. It may demonstrate hypoechoic mass lesion protruding from the bladder through the inguinal canal into scrotum. Voiding cystourethrography is best diagnostic imaging modality for IBH. It may reveal dog-ear shaped bladder in the scrotum [2]. CT is indicated in obese males, aged  $\geq 50$  years, with inguinal swelling and LUTS [3]. Urologic diagnostic modalities such as flexible cystoscopy is indicated to confirm the diagnosis, evaluate the prostate and the bladder. In cases of gross hematuria cystoscopy is indicated to exclude additional pathology of the bladder. IBH may be mistaken for bladder diverticulum due to radiological and cystoscopic appearance [6].

Open surgical repair is preferred treatment [2,3]. Catheterization prior to surgery is advised. Surgical approach depends upon surgeons' preference, local status and condition of the patient. Defect could be repaired with or without mesh. Most important

part of operation is clear identification of each anatomic element inside hernia sac [3].

Herniated bladder is resected and/or reduced from hernia sac and repositioned in its anatomical position [2,6]. In the past, herniated portion of the bladder was resected in massive IBH [6]. Indications for bladder resection are bladder damage during hernioplasty, necrosis of bladder neck, bladder tumors, bladder diverticulum and hernia neck of less than 5 mm in diameter [2,3,6].

Damage of bladder during hernioplasty is common. There is data that in about 12% of IBH, bladder is damaged [3,6]. The rate drops when IBH is diagnosed preoperatively [3]. Bladder resection also contributes to development of infections [2].

Sometimes patients may opt for conservative therapy such as watchful waiting or intermittent catheterization (to reduce the bladder out of the hernia sac) [6,7].

### 4. Conclusion

IBH is rare condition. It should be considered in obese males, aged  $\geq 50$  years with LUTS. Bladder should be inspected for damages and if any should be repaired. IBH is often related to urologic malignancies which should be excluded intra- or postoperatively. In cases when urological malignancy is suspected urologist should be consulted.

### Conflict of interest

Authors have no conflicts of interest to disclose.

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### Ethical approval

Ethical approval is not applicable.

### Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

### Author contribution

Milena Taskovska has performed literature research, data collection and wrote the first draft of the manuscript. Jurij Janež has managed the study design and concept, and data analysis.

### Guarantor

Both authors have read and approved manuscript and accept full responsibility for the work.

### References

- [1] A. Khan, I. Beckley, B. Dobbins, K.M. Rogawski, Laparoscopic repair of massive inguinal hernia containing the urinary bladder, *Urol. Ann.* 6 (2) (2014) 159–162.
- [2] A. Hamidi Madani, H. Mohammadi Nikouei, H.R. Baghani Aval, A. Enshaei, A. Asadollahzade, et al., Scrotal herniation of bladder: a case report, *Iran. J. Med. Sci.* 38 (1) (2013) 62–64.
- [3] K. Moufid, D. Touiti, L. Mohamed, Inguinal Bladder hernia: four case analyses, *Rev. Urol.* 15 (1) (2013) 32–36.

- [4] R.A. Agha, A.J. Fowler, A. Saetta, I. Barai, S. Rajmohan, Orgill DP, for the SCARE group. the SCARE statement: consensus-based surgical case report guidelines, *Int. J. Surg.* 34 (2016) 180–186.
- [5] R.J. Fitzgibbons, R. Armour Forse, Groin hernias in adults, *N. Engl. J. Med.* 372 (2015) 756–763.
- [6] K.H. Kraft, S. Sweeney, A.S. Fink, C.W.M. Ritenour, M.M. Issa, Inguinoscrotal bladder hernias: report of a series and review of the literature, *Can. Urol. Assoc. J.* 2 (6) (2008) 619–623.
- [7] G.L. Yong, M.Y. Siaw, A.J.L. Yeoh, G.E.G. Lee, Inguinal bladder hernia: case report, *Open J. Urol.* 3 (2013) 217–218.

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