

## CASE REPORT

# Non-reducible Inguinoscrotal Hernia of the Urinary Bladder as a Direct Component of a Pantaloon Hernia: A Case Report and Review of Literature

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Pantaloon hernias are a subset of abdominal hernias wherein both indirect and direct components of inguinal hernias are present on one side. Inguinoscrotal hernia of the urinary bladder is a rare condition involved in less than 4% of inguinal hernias and more so if they are part of a direct component of a pantaloon hernia. This is a case of a 65-year-old male who presented a non-reducible right inguinoscrotal mass. Inguinoscrotal herniation of the urinary bladder was preoperatively diagnosed through imaging. Intra-operatively a pantaloon hernia was noted with the herniated urinary bladder as the direct component and omentum as the indirect component. The patient underwent cystourethroscopy, inguinal exploration right, and mesh hernioplasty. The patient had an unremarkable post-operative course and was discharged with improved conditions. Awareness of this clinical condition will aid in the diagnosis, and proper management and prevent post-operative complications.

**Key words:** pantaloon hernia, urinary bladder hernia, cystocoele, hernioplasty

### Introduction

An inguinal hernia is an opening in the myofascial plain of the oblique and transversalis muscles that can allow for herniation of intraabdominal or extraperitoneal organs. These groin hernias can be divided into indirect, direct, and femoral based on location.<sup>1</sup> Pantaloon hernia or saddlebag hernia is characterized by the presence of both indirect and direct inguinal hernias at the same laterality. The incidence of pantaloon hernia in males is 5.6% in males and approximately 1.8% in females.<sup>2</sup> Inguinoscrotal hernia of the urinary bladder was first described by Levine in 1951 as a scrotal cystocoele is a rare event that is common

among men. It occurs in about 1- 4% of inguinal hernias in the general population.<sup>3</sup>

According to Baruch (2018), patients with urinary bladder hernia are diagnosed incidentally and develop without a specific symptom but generally present inguinal pain or swelling associated with voiding or lower urinary tract symptoms (LUTS). Less than 7% of inguinal bladder hernias are diagnosed prior to surgery, 83% are diagnosed intraoperatively, and 16% are diagnosed postoperatively due to complications.<sup>3</sup>

Here is a case of a total urinary bladder hernia as a direct component of a pantaloon hernia diagnosed pre-operatively. This paper aimed to highlight the rarity of the case as well as the

importance of complete history taking, physical examination, and diagnostic workup in order to prevent postoperative complications common in this case.

### The Case

The patient in this case is a 65-year-old, Filipino male, a known diabetic, with a BMI of 30.3 who came with a one-week history of notable non-reducible bulging right inguinoscrotal mass which was associated with urinary frequency, straining, and feeling of incomplete bladder emptying. The patient had a one-year history of lower urinary tract symptoms predominantly urinary frequency and nocturia. He was noted to have an enlarged prostate and was treated with alpha-adrenergic blockers and 5-alpha reductase inhibitors which offered relief of symptoms. The patient had a family history of hypertension and diabetes mellitus on both maternal and paternal sides. Past medical history revealed a 4-year history of diabetes mellitus and gouty arthritis with no prior surgeries.

A pertinent physical examination revealed a right inguinal mass extending toward the right scrotum. The mass was non-reducible, non-tender, soft, and cystic in character. The right and left testis were palpable and unremarkable. Rectal examination revealed a smooth, rubbery, non-tender prostate, approximately 30 grams. The initial consideration at that time was a non-reducible indirect right inguinal hernia.

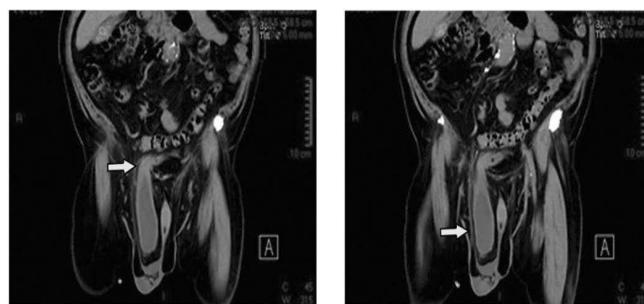
Laboratory studies were within normal limits except for an elevated HbA1c of 7.2% (4.3-6.4%). Urinalysis demonstrated bacteriuria (3027/HPF), microcytic hematuria (42/HPF), and pyuria (42/HPF) with a normal PSA of 4ng/dL.

Plain computed tomography (CT) imaging (Figures 1 & 2) showed a widened right inguinal canal and herniation of the urinary bladder into the right inguinoscrotal region. The kidneys were noted to be normal in size with the collecting system not dilated. A static cystogram (Figure 3) was also performed which showed an outlined urinary bladder with a significant portion herniating down towards the right inguinoscrotal region.

The patient was scheduled for, cystourethroscopy possible TURP, and right inguinal exploration. On cystoscopy, the median lobes of the prostate



**Figure 1.** Axial CT scan of the abdomen and pelvis showing the herniation of the urinary bladder into the right inguinoscrotal area (arrow).

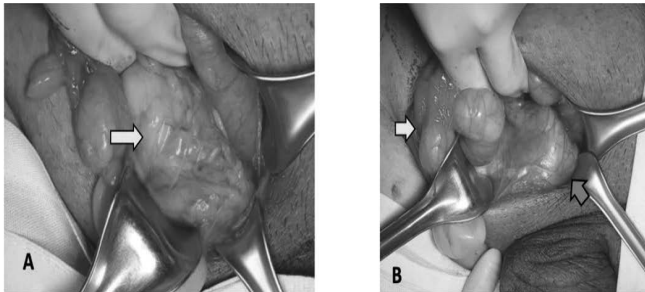


**Figure 2.** Coronal CT scan of the abdomen and pelvis showing the herniation of the urinary bladder into the inguinoscrotal area (arrows).



**Figure 3.** Cystogram showing a contrast-filled urinary bladder herniated towards the right inguinoscrotal area.

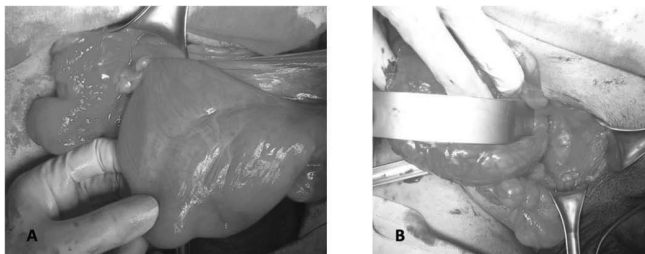
were not enlarged, bilateral slit-like orifices were identified, and mild trabeculations were noted. Upon inguinal exploration, an indirect inguinal hernia containing the omentum was identified (Figure 4A). As the dissection proceeded medially, the herniated urinary bladder was noted (Figure 4B) as it passed medially to the external inguinal ring and enters the scrotum together with the herniated omentum.



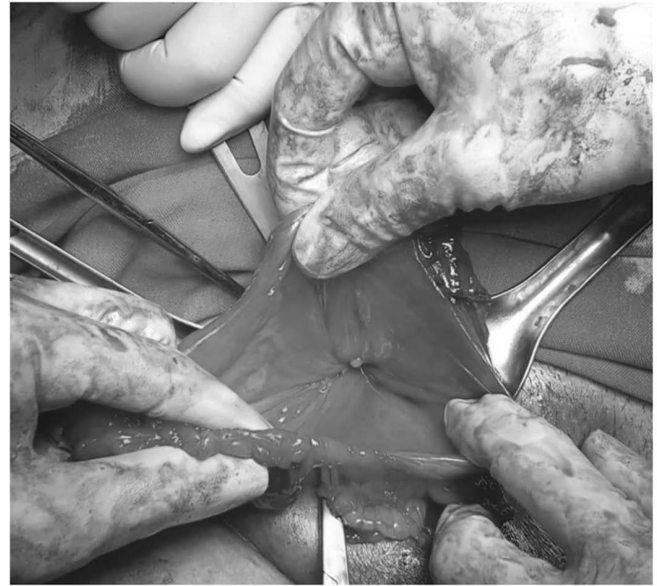
**Figure 4.** Inguinal Exploration: **A.** Indirect inguinal hernia containing the omentum (arrow). **B.** Pantaloon hernia; Indirect component containing omentum (arrow) and directly herniating urinary bladder (dark arrow) entering the right scrotum.

Careful blunt and sharp dissection was done. The herniated portion of the urinary bladder was completely withdrawn from the scrotum (Figure 5A) and reduced (Figure 5B). The indirect component of the pantaloon hernia was carefully separated from the spermatic cord and contents were reduced. Figure 6 shows the hernial sac after the reduction of the omentum. A Lichtenstein repair was done to decrease the risk of recurrence.

A post-operative cystogram was done (Figure 7) showing the reduced urinary bladder in the pelvis with a smooth mucosal outline, no filling defects, and no leak.



**Figure 5.** Urinary Bladder Hernia: **A.** Portion of the urinary bladder completely withdrawn from the right scrotum. **B.** Post-reduction image of the herniated urinary bladder.



**Figure 6.** The hernial sac after reduction of its contents.



**Figure 7.** Cystogram showing the reduced contrast-filled urinary bladder in its normal pelvic location with smooth mucosal lining and no leak.

The postoperative course was uneventful, and the patient was discharged on the 2nd postoperative day.

## Discussion

Abdominal wall hernias mostly occur in the groin. These groin hernias can be divided into



indirect, direct, and femoral based on location.<sup>1</sup> The most common subtype of groin hernia in men and women is indirect inguinal hernia.<sup>5</sup> Pantaloon hernia is a subtype that is characterized by the presence of both indirect and direct inguinal hernias at the same laterality. Urinary bladder involvement occurs in 1-4% of inguinal hernias in the general population.<sup>3</sup> The etiology may be related to bladder outlet obstruction due to an enlarged prostate, chronically distended bladder, decreased bladder tone, pericystitis, adhesion of the bladder wall to the perivesical fat, obesity, and weakness of the pelvic floor muscles in combination with a weak abdominal wall.<sup>6,8</sup>

A systematic review done by Branchu et al.<sup>3</sup> reported that herniation of the urinary bladder into the inguinoscrotal area mainly occurred in a male patient who was overweight and over the age of 50 years old. Although some patients with inguinoscrotal bladder hernia may be asymptomatic, many would report having inguinal swelling, lower urinary tract symptoms, pain, and reduction of inguinal mass after voiding.<sup>1</sup>

It has been reported that less than 7% of bladder hernias are diagnosed preoperatively, while 16% of those are diagnosed postoperatively due to complications.<sup>8</sup>

The most common radiologic modalities that may be used as an adjunct to history and physical examination would include ultrasonography, computed tomography (CT), and magnetic resonance imaging (MRI)<sup>5</sup> as well as voiding cystourethrography which is considered the best diagnostic modality for inguinoscrotal bladder hernia.<sup>6,7</sup> High-resolution ultrasound with 5-, 7.5, or 10-MHz transducers allows better anatomic depiction and higher sensitivity for the detection of scrotal abnormalities.<sup>7</sup> CT scans and MRIs provide static images that are able to delineate groin anatomy, detect groin hernias, and exclude potentially confounding diagnoses<sup>5</sup> as well as help in surgical planning.

Oruç et al.<sup>9</sup> found that 11.2% of the hernias in a review of 190 cases were associated with urologic malignancies including bladder carcinoma and prostate carcinoma. Hence, it is imperative that inguinoscrotal bladder hernias be diagnosed preoperatively so that appropriate surgical and medical plans are made.

The presented case was diagnosed preoperatively, Hence a careful and well-planned approach was done. The possibility of having morbid postoperative complications was greatly reduced because necessary steps were taken.

Surgical repair of hernias can be performed open, laparoscopic, or with robotic assistance<sup>5</sup> however open surgical repair is the preferred treatment.<sup>6</sup> The surgical approach depends on the surgeons' preference and the patient's status and condition.<sup>6</sup> The standard of treatment for inguinoscrotal bladder hernia is either reduction or resection of the herniated bladder.<sup>7</sup> Indications for bladder resection include bladder damage during hernioplasty, necrosis of the bladder neck, bladder tumors, bladder diverticulum, and hernia neck of less than 5 mm in diameter<sup>6</sup> which were not present in this case.

## Conclusion

Inguinal hernia is one of the most common disease entities that general practitioners, surgeons, and urologists may encounter. However, being aware of other disease entities that may accompany or present similar to inguinal hernias must always be kept in mind. A detailed history and physical examination of all patients are paramount to having an accurate diagnosis. Inguinoscrotal bladder hernias should be diagnosed preoperatively as much as possible to prevent complications. General surgeons and urologists alike must be aware that this kind of rare condition exists.

## References

1. Hammoud M, Gerken J. Inguinal hernia. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan.
2. Lutaya I, Sayed Mushir Ali A, Terron C, et al. A rare case of a non-strangulated bladder pantaloon hernia. *Cureus* 2022 Aug;14(11):e31208. DOI 10.7759/cureus.31208
3. Branchu B, Renard Y, Larre S, Leon P. Diagnosis and treatment of inguinal hernia of the bladder: a systemic review of the past 10 years. *Turkish J Urol* 2018 Sep;44(5):384-8.
4. Kraft KH, Sweeney S, Fink AS, Ritenour CWM, Issa MM. Inguinoscrotal bladder hernias: report of a series and review of the literature. *Canadian Urol Assoc J* 2008 Dec;2:619-23. DOI:10.5152/tud.2018.46417
5. Khan K, Chaudhry A, Feinman MB. Inguinoscrotal hernia containing the urinary bladder. *BMJ Case Rep* 2016 Sep. DOI: 10.1136/bcr-2016-217408

6. Brunicardi CF, Andersen D, Billiar T, Dunn D, Hunter J, Kao L, Matthews J, Pollock R. Schwartz's Principles of Surgery. 11th Ed. New York: McGraw Hill Education, 2019.
7. Taskovaska M, Janez J. Inguinal hernia containing urinary bladder—a case report. *Int J Surg Case Rep* 2017 Sep;40:36-8. DOI:10.1016/j.ijscr.2017.08.046
8. Moufid K, Touiti D, Mohamed L. Inguinal bladder hernia four case analyses. *Rev Urol* 2013;15(1):32-6.
9. Oruç MT, Akbulut Z, Ozozan O, Coskun F. Urological findings in inguinal hernias: a case report and review of the literature. *Hernia* 2004 Feb;8:76-9. DOI:10.1007/s10029-003-0157-6