

Inguinal bladder hernia

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Section: Uroradiology & genital male imaging

Area of Interest: Pelvis

Procedure: Diagnostic procedure

Imaging Technique: CT

Special Focus: Hernia Case Type: Clinical Cases

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Patient: 75 years, male

Clinical History:

75-year-old man presented to urology clinic with chronic urinary frequency and nocturia since last year, with deterioration in the last 5 months. He did not complain of any haematuria, urinary hesitancy or dribbling. He also noticed a swelling in his right groin for the last three months.

Imaging Findings:

On examination, a non-tender palpable mass in the right inguinal canal was noted without any sign of inflammation. The urine culture showed Klebsiella growth. The patient was investigated further with CT kidney ureters bladder (CTKUB). Figure 1 shows distortion of bladder from the axial line and abnormal orientation of the anterior side of the bladder toward the right side. Presence of the bladder outside the pelvic cavity is illustrated in Figure 2, along the right inguinal canal with extension to the right hemi-scrotum (Fig. 3), in keeping with right-sided inguinal bladder hernia (IBH). A calcification also can be noted inside the herniated bladder in Figure 2, suggesting a bladder calculus. The patient was treated with bladder hernia reduction followed by herniorrhaphy, which resulted in significant improvement of his symptoms.

Discussion:

Scrotal cystocele is a rare condition, first described by Levin in 1951 [1], accounted for 1-4% of inguinal hernias (IH), with higher prevalence, nearly 10%, among obese men with age above 50. [2, 3]

Inguinal bladder hernias (IBH) are usually asymptomatic and are diagnosed incidentally. They can present with lower urinary tract symptoms (LUTS) such as dysuria, nocturia, haematuria or urinary frequency, while advanced cases might present with more classic symptoms such as two stage voiding (when bladder empties spontaneously in the first stage and the herniated bladder would be emptied following administration of manual pressure on the herniated sac in the second phase), or reduction in size of scrotum after voiding. [2]

According to previous studies less than 7% of cases are diagnosed prior to operation, while 16% are recognised post-operatively due to complications such as bladder leakage, leaving the majority of cases to be discovered intra-operatively. [2] Since undiagnosed IBH may result in significant surgical complications, such as iatrogenic bladder or urethral injury, many studies suggested performing preoperative CT scan in the existence of any doubt about the content of IH, especially in high risk individuals such as male obese patients aged >50 presenting with urological symptoms, patients with other causes of urinary obstruction or with previous history of herniorrhaphies. [4]

It is noteworthy that the study by Oruç et al showed that 23% of IBH patients had concomitant urological complications such as benign prostatic hypertrophy or hydronephrosis, and 11% had urological malignancies. As a result, they proposed that due to high risk of malignancy IBH should not be ignored. [5]

Retrograde cystography is considered the investigation of choice, though it can only visualise the hernia during

voiding. Ultrasonography might be able to identify a fluid-filled sac, connected to the proximal bladder, while CT and MRI can detect anteroinferior angulation of the bladder base, which is a diagnostic sign for IBH. As the hernia would be difficult to detect while the bladder is empty, the CT scan and MRI should be performed with moderately full bladder. [6]

While conservative treatment is considered for asymptomatic patients with IBH, symptomatic patients are treated with reduction or resection of the herniated bladder followed by herniorrhaphy. [4]

Teaching points:

Diagnosis of IBH should be considered in all high-risk patients and in the presence of any doubt about IH content, patients should be referred for imaging studies if appropriate, in order to prevent potential surgical complications.

Differential Diagnosis List: Right-sided inguinal bladder hernia accompanied with bladder calculus, Hydrocele, Other types of inguinal hernia

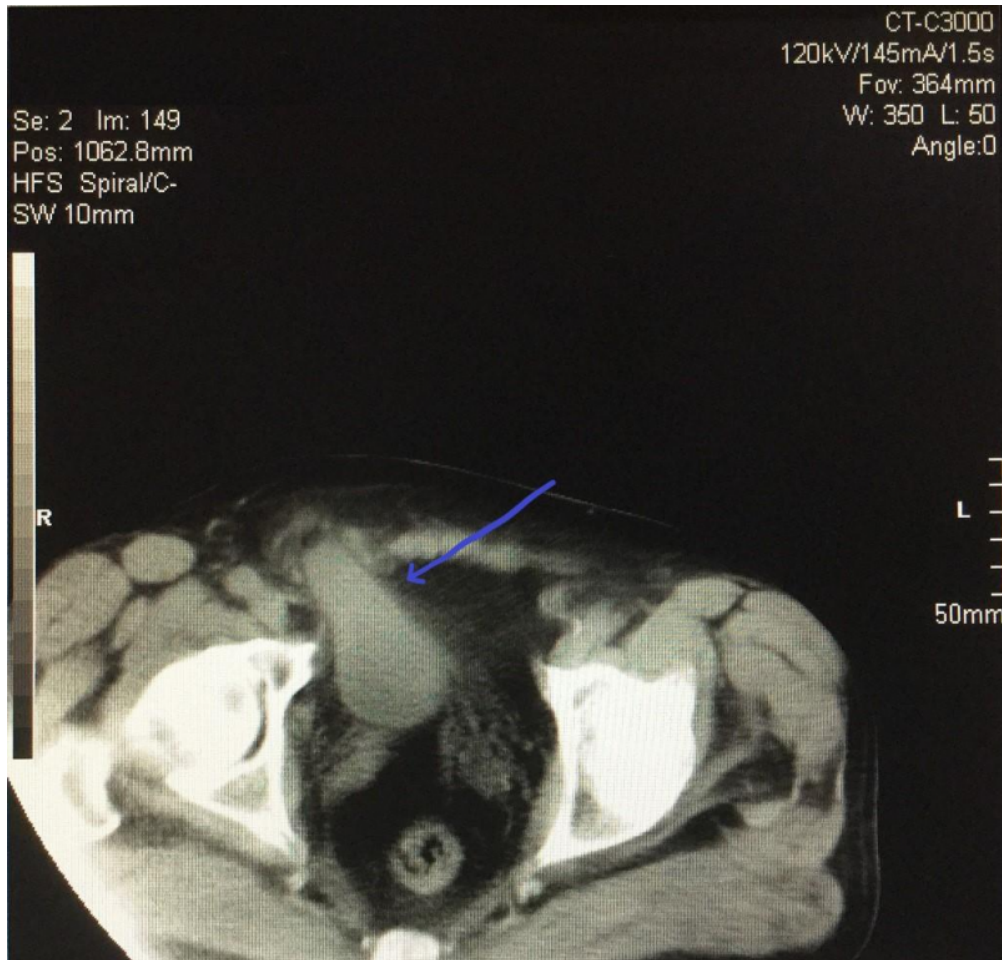
Final Diagnosis: Right-sided inguinal bladder hernia accompanied with bladder calculus

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Figure 1

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Description: Distortion of bladder from the axial line. **Origin:** Dehghani M, Department of Urology, Isfahan, Iran

Figure 2

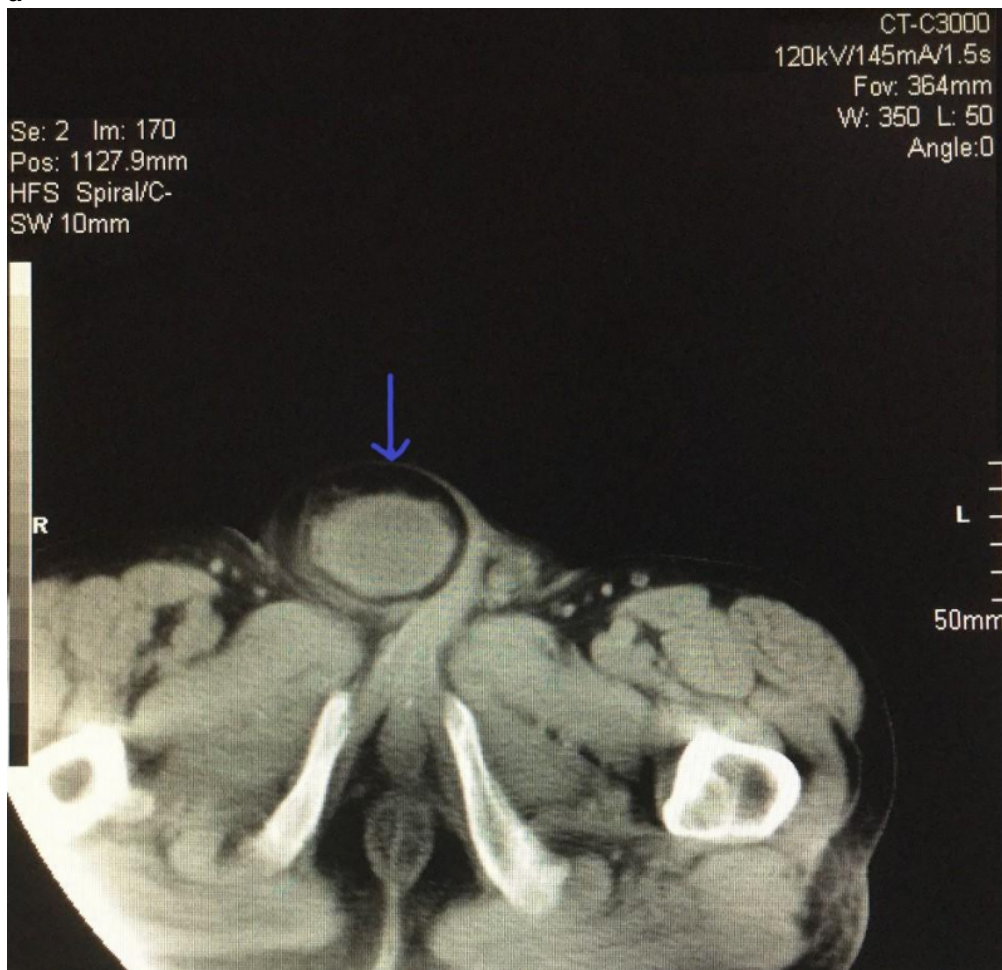
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Description: Presence of bladder outside the pelvic cavity and calcification inside the herniated bladder. **Origin:** Dehghani M, Department of Urology, Isfahan, Iran

Figure 3

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Description: Inguinal canal with extension to right hemi-scrotum **Origin:** Dehghani M, Department of Urology, Isfahan, Iran