

Pre-Operative Diagnose of Inguinal Bladder Hernia: Typical Radiological Findings

Camila R T Burity*, Fábio T Ferreira, Edson S Bezerra, Dorival M Duarte, Euclides J Nunes and Ricardo D Saade

Hospital Municipal, Campinas, Brazil

*Corresponding author: Camila R T Burity, Hospital Municipal, Rua Artur Ramos, 558, apto 112A, Campinas -SP, Brazil

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Abstract

A sliding hernia occurs when the hernia sac is partially formed by the wall of an abdominal organ, as sigmoid colon, appendix, cecum, and urinary bladder. The presence of bladder is rare, occurring in less than 4% of the cases. This case series shows typical radiology findings in three men with bladder inguinal hernia and how the pre-operative diagnoses can prevent complications.

Keywords: Inguinal hernia; Bladder; Cystography

Introduction

A sliding hernia occurs when the hernia sac is partially formed by the wall of an abdominal organ, as sigmoid colon, appendix, cecum, and urinary bladder [1]. First described by Levine [2] in 1951, an inguinal bladder hernia is a rare event between the abdominal wall defects, occurring in less than 4% of the cases [3].

Clinical presentation is variable and can include inguinal swelling, low tract urinary symptoms (LUTS), pain, and the need for inguinal compression when voiding [3]. This case series shows typical radiology findings in three men with bladder inguinal hernia followed in this service.

Cases Presentation

Case 1



Figure 1:A -right inguinoscrotal hernia / B- Retrograde cystogram showing dumbbell-shaped urinary bladder in a sliding inguinal hernia/ C- Contrast cystography after hernia repair.

A 58 years-old man with right inguinal hernia surgical repair schedule was referred to urology for LUTS investigation. During clinical history, the IPSS showed a severe score with a predominance of voiding symptoms. He denies comorbidities or previous surgeries. Physical examination revealed a right inguinoscrotal hernia (Figure 1A) and a prostate of 30g in the digital rectal exam. He was treated

with doxazosin 4mg/day, without success. A retrograde cystogram was requested (Figure 1B), and it exhibited a bladder herniation with a dumbbell shape (Figure 1C). Based on this result, an inguinal hernia repair with the Liechtenstein technique was performed with complete remission of urinary symptoms.

Case 2

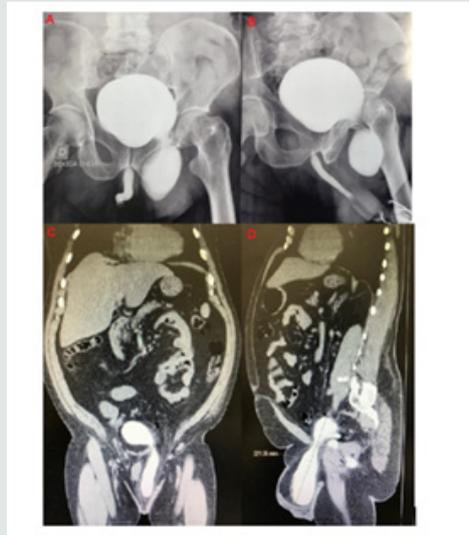


Figure 2: A and B- cystography indicating the prolapse of urinary bladder/ C- Abdominal CT showing the inguinal bladder hernia -coronal view and D- sagittal view.

A 70 years-old man, obese, hypertensive, diabetic, complaining of inguinal swelling and urinary symptoms for three years, sought the urologist. Previous surgeries include a right inguinal hernioplasty and a transurethral resection of the prostate. Among the signs, the need for inguinal compression for complete bladder emptying stood out. Physical examination presented a significant irreducible left inguinal bulging and a prostate of 40g. Retrograde urethrocytography (Figure 2A) revealed a sizeable secular image projected on the left inguinal region; confirmed the diagnoses with computerized tomography (CT), measuring 8.3 x 5.2cm (Figure 2B). An open repair using the Lichtenstein technique was done (Figure 2C), with remission of voiding symptoms (Figure 2D).

Case 3

A 57-years-old man complaining of testicular enlargement associated with voiding dysfunction. He reports the need for groin compression for complete emptying. He denies previous surgery or other comorbidities. Physical examination showed fluid in the left scrotum (Figure 3A). Cystogram pointed a bladder protrusion in the left inguinal canal with a refluxing ureter present in the hernial sac (Figure 3B). An open repair was done with excellent results (Figure 3C). Cystogram control showing a bladder with high capacity and no more herniation.

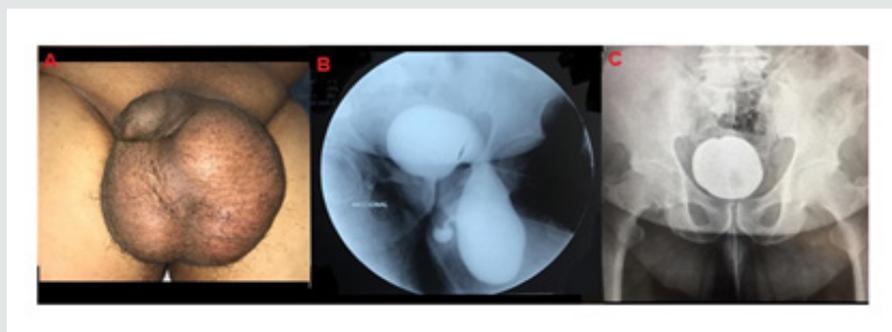


Figure 3: A- left inguinal hernia with fluid in scrotum/ B- urethrocytography illustrating the protrusion of the bladder in the left side and a refluxing ureter C- cystogram after inguinal repair.

Discussion

Bladder hernia is a rare disease frequently appearing in mid-age males that should be suspected in every patient with obstructive urinary symptoms and inguinal swelling. Fewer than 7% of bladder hernias are discovered before surgery [4], which increases the risk of inadvertent intraoperative injuries. Between the possible radiological exams, we highlight the cystography and CT-scan. In cystograms, the typical images are described as dumbbell or dog-ear shape of the bladder [5,6], as observed in these three cases. It is an easily interpretable test that should be requested in case of diagnostic doubt or presence of scrotum fluid on ultrasound. CT can add invaluable information during the pre-operative planning of these patients, like the size, position, and contents of the hernial sac, beyond identify associated pathologies or complications such as hydronephrosis or strangulation [7]. If it has done with contrast, as in case 2, the bladder content in the hernia is better demonstrated.

Conclusion

Bladder hernia is a pathology that should be reminded in every male patient with obstructive symptoms and associated inguinal hernia. Retrograde and voiding cystourethrogram and Computerized Tomography are two of the possible radiological

diagnostic tests in these cases. Preoperative diagnosis improves the therapeutic approach and prevents complications.

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