

Scannographic Diagnosis of an Inguinal Hernia of the Bladder: A Case Report

Hind Chenter^{1*}, K. Outaghyame¹, Y. Bouktib¹, A. Elhajjami¹, B. Boutakioute¹, M. Ouali Idrissi¹, N. Cherif Idrissi Guennouni¹

¹Department of Radiology Arrazi, Mohammed VI University Hospital, Cadi Ayyad University, Marrakech, Morocco

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*Corresponding author: Hind Chenter

Department of Radiology Arrazi, Mohammed VI University Hospital, Cadi Ayyad University, Marrakech, Morocco

Abstract

Case Report

Inguinal hernias with bladder involvement are rare but can cause serious issues like urinary obstruction. This report details a 65-year-old man with a history of right inguinal hernia repairs who presented with anuria and a right scrotal mass. Imaging studies revealed a hernia containing part of the bladder, leading to severe kidney swelling. These hernias mainly affect elderly men with risk factors such as obesity and previous repairs. Diagnosis is often made during surgery, but imaging techniques like CT and ultrasound can identify herniated bladder tissue and obstruction signs preoperatively. Accurate imaging is crucial for effective surgical intervention and preventing complications.

Keywords: CT, Hernias, Inguino-Vesical Hernias, Bladder, IVH, RCU.

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INTRODUCTION

Inguinal hernias are among the most common pathologies in general surgery. They result from a defect in the abdominal wall at the inguinal orifice, allowing the passage of abdominal structures into the inguinal region. Although in the majority of cases, only the small intestine or the omentum are herniated, in rare cases, the bladder can also be involved in the hernia sac [1]. Inguinal hernia with bladder content is a rare but potentially serious complication. It most often occurs in elderly men, especially those with a history of inguinal surgery. The presence of the bladder in the hernia sac can lead to urinary tract obstruction, or even bladder ischemia, threatening renal and bladder prognosis [2].

OBSERVATION

This case involves a 65-year-old male patient, Mr. M.A., with a history of two right inguinal hernia repairs in 2016, who presented with anuria associated with a chronic right scrotal mass. The patient was afebrile with a preserved general condition. On digital rectal examination, the prostate was found to be enlarged. Renal function tests showed elevated creatinine at 177 mg/L and urea at 2.6. Renal ultrasound revealed severe bilateral hydronephrosis with anechoic content in both kidneys. Uroscan CT imaging demonstrated major bilateral dilation of the pyelocalyceal cavities and the entire ureter, with renal cortical thinning, pale nephrogram, and delayed secretion and excretion within normal timeframes. It also identified a right inguinal hernia sac measuring 15.6 x 5 mm, through a 47 mm parietal defect, containing intestinal and omental contents, and with partial incarceration of the bladder and right ureteral orifice.

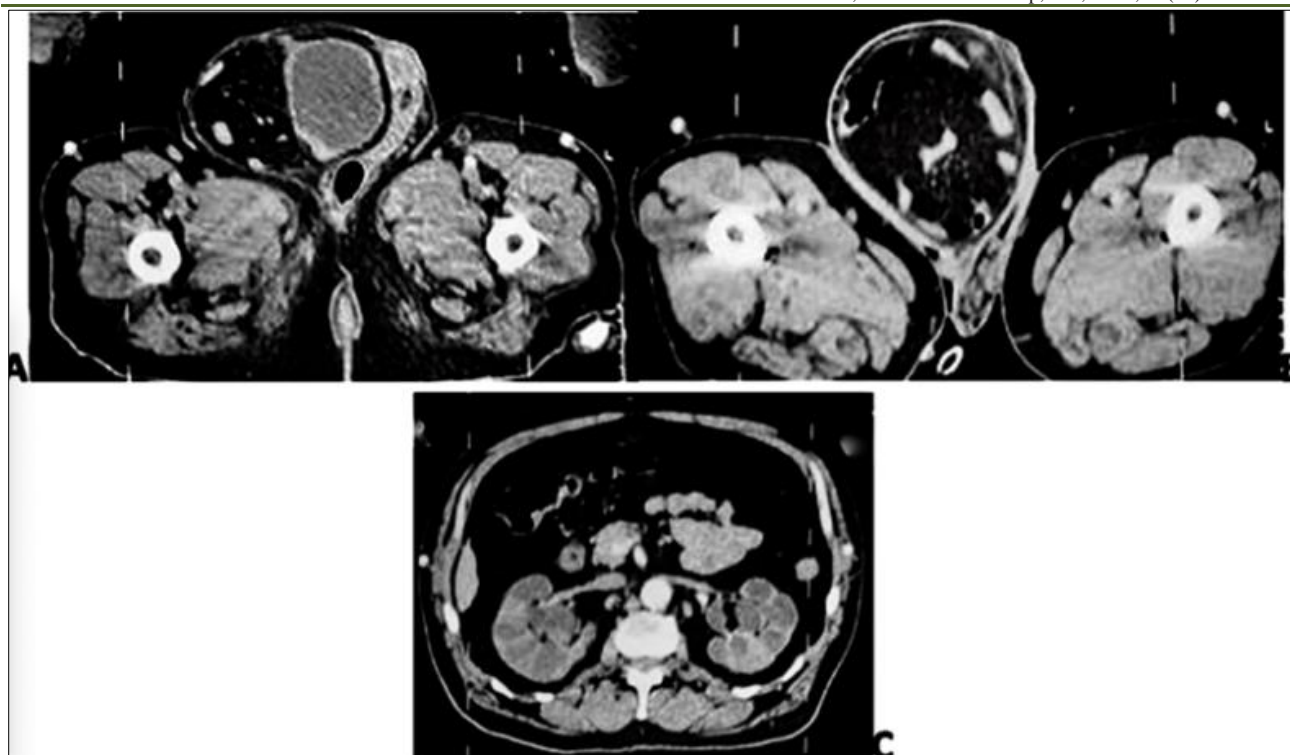


Figure 1: (A, B, C): Abdominal CT scan in axial section showing: right inguinal hernia sac measuring 15.6 x 5 mm, through a 47 mm parietal defect, containing intestinal and omental contents, and with partial incarceration of the bladder and right ureteral orifice with major bilateral dilation of the pyelocaliceal cavities and the entire ureter, with renal cortical thinning, pale nephrogram, and delayed secretion and excretion within normal timeframes

DISCUSSION

Inguino-vesical hernias are a rare pathology, observed in both sexes with a clear predominance in men. Predisposing factors include abdominal obesity, age over 50 years which induces inguinal wall aging, a history of inguinal hernia repair, as well as the presence of voiding dysfunction secondary to a bladder outlet obstruction, notably prostate cancer. The latter also typically develops after age 50 and can cause increased intra-abdominal pressure, favoring the passage of the bladder through a weakened inguinal canal [3-6].

In the case of our patient, there were at least three possible contributing factors that could explain the vesical hernia: advanced age (65 years), benign prostatic hyperplasia, and abdominal obesity.

The diagnosis is often made intraoperatively for minor forms, such as incarceration of a diverticulum or a portion of the bladder within the hernia sac. These forms are typically asymptomatic [7].

Sometimes, the patient may present with an inguino-scrotal hernia and urinary symptoms, especially with a two-stage voiding pattern requiring compression of the scrotum during micturition, the "Mery's Sign", which indicates a complete intravaginal herniation of the bladder [8].

This pathology is one for which the diagnosis is most often established intraoperatively. The clinical presentation in our observation allowed us to consider the diagnosis and indicate a CT scan examination. Ultrasonographic evaluation was performed in this patient prior to the CT scan. It showed a significant bilateral hydroureteronephrosis and the presence of fluid in the scrotum, suggestive of a hydrocele. These two signs, combined with a history of recurrent hernia, would have been sufficient to substantiate the diagnostic basis. Some authors have emphasized the difficulties of sonographic diagnosis in bilateral forms of this condition [1-7].

Medical imaging can help establish the preoperative diagnosis of inguino-vesical hernia (IVH). Most often, it involves a retrograde cystourethrogram (RCU) performed to evaluate for urethral stricture, which can objectively demonstrate the IVH as a unilateral, regular, rounded filling defect contiguous with the bladder, descending below the bladder floor [9].

The key CT scan findings in the case of an inguinal hernia containing the bladder include, The most definitive radiological sign is the visualization of the herniated bladder wall or a portion of the bladder within the inguinal hernia sac. This may present as a fluid-filled or partially filled structure that is continuous with the bladder itself. Additionally, the CT scan can identify the

herniated bladder wall protruding through the weakened inguinal canal, appearing as a focal bulge or outpouching of the bladder. Evidence of urinary tract obstruction, such as hydronephrosis or distension of the bladder proximal to the hernia site, is also an important diagnostic feature. Notably, a lack of intervening fat planes between the herniated bladder and other abdominal/pelvic structures indicates a direct communication. Occasionally, the presence of bladder diverticula or trabeculations within the herniated portion of the bladder wall may also be visualized [7-9].

These characteristic CT scan findings allow for a definitive preoperative diagnosis of an inguinal hernia with bladder involvement, enabling appropriate surgical planning. Early recognition of this condition is crucial to prevent associated complications like bladder ischemia or renal impairment [7].

Abdominal-pelvic ultrasound should be the first-line imaging modality and would be sufficient to establish the diagnosis of inguino-vesical hernia. The key diagnostic features that can be readily identified on ultrasound include an urgent urge to urinate, emptiness of the bladder lumen, and the presence of a sac in the scrotum. These cardinal signs hold even more value in the context of a recurrent inguinoscrotal hernia. The characteristic ultrasound findings, especially when considered together, would typically be adequate to make the preoperative diagnosis without the need for additional advanced imaging. The definitive management of inguino-vesical hernia involves surgical repair of the hernia defect with reintegration of the herniated bladder component, as was the case in our patient. Ultrasound should therefore be the initial preferred examination for suspected inguino-vesical hernias, as it can provide the necessary diagnostic information to guide appropriate surgical planning and treatment [7].

CONCLUSION

The inguinal hernia of the bladder is a rare condition, whose diagnosis is often made intraoperatively.

Medical imaging plays an important role in the diagnosis of inguinal hernia of the bladder, particularly for the positive diagnosis and for the diagnosis of complications in order to guide the surgical management.

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