***Case Report* / Olgu Sunumu**

Isolated Inguinal Bladder Hernia

İzole İnguinal Mesane Hernisi

Tamer BAYSAL, Ahmet SOYLU,[1] Özgül ERDOĞAN

Departments of Radiology and [1]Urology, Medical Faculty of İnönü University, Malatya

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Isolated urinary bladder herniation into the inguinal canal is rare. It is often diagnosed intraoperatively during surgery or is identified after intraoperative injury. Early diagnosis with radiologic imaging is important to avoid complications during repair surgery. Computed tomography seems the best imaging choice to outline the details of herniation. We report an incidentally discovered case of inguinal bladder herniation with intravenous pyelography and computed tomography findings.

Key words: Bladder; hernia; computed tomography.

İzole inguinal kanal içerisine mesane herniasyonu nadir görülür. Tanı genellikle cerrahi sırasında intraoperatif olarak ya da intraoperatif gelişen yaralanma sonucu konur. Radyolojik görüntüleme ile erken tanı cerrahi onarım sırasında komplikasyonlardan kaçınmak için önemlidir. Bilgisayarlı tomografi herniasyonun detaylarını ortaya koymada en önemli görüntüleme seçeneğidir. Biz rastlantısal olarak tespit ettiğimiz inguinal yerleşimli herniasyon olgusunun intravenöz pyelografi ve bilgisayarlı tomografi bulgularını sunuyoruz.

Anahtar sözcükler: Mesane; herni; bilgisayarlı tomografi.

Herniation of the urinary bladder into the inguinal canal is a rare entity.[1] The bladder is involved in approximately 1% to 4% of all inguinal hernias.[2,3] It is usually diagnosed incidentally or due to the symptoms of the urinary system.[4] Early diagnosis with radiologic imaging is important to avoid complications during repair surgery. Computed tomography (CT) seems the best choice to outline the details of herniation. In this paper, we report the radiologic findings of an inguinal herniation of the bladder.

CASE REPORT

A 48-year-old man presented to the Urology Department with a two-week history of right flank pain, episodes of hematuria and dysuria. He also complained of right inguinal hernia of five months' duration. The physical examination revealed flank tenderness and a reducible left inguinal hernia. An IVP revealed right distal ureter calculus with moderate pelvicaliceal dilatation of the right kidney. A left-sided bladder ear and partial herniation of the bladder protruding toward the inguinal canal were detected. The neck of the hernia could not be demonstrated (Fig. 1). Pelvic CT examination was performed with intravenous contrast enhancement. Computed tomography demonstrated that the left upper part of the bladder herniated into the inguinal canal. There was no contrast media in the herniated part of the bladder (Fig. 2). Computed tomography obtained in prone position revealed the bladder ear protruding into the inguinal canal filled with contrast media (Fig. 3). The patient underwent right ureterocystoscopic stone removal and herniorrhaphy. Intraoperatively, the bladder was decompressed and the direct inguinal hernia was repaired.

Correspondence (İletişim adresi): Dr. Tamer Baysal. İnönü Üniversitesi Tıp Fakültesi Radyoloji Anabilim Dalı, 44280 Malatya.
Tel: 0422 - 341 06 60 / 5701 Fax (Faks): 0422 - 341 07 28 e-mail (e-posta): tamerbaysal@hotmail.com

Fig. 1. *Intravenous pyelogram images* ***(a)*** *revealing left-sided bladder ear and* ***(b)*** *contrast-filled sac herniated into left inguinal canal.*

DISCUSSION

Inguinal hernia is a common phenomenon, representing displacement of abdominal and/or pelvic contents through a defect in the abdominal wall or by the way of inguinal canal. Urinary bladder can herniate into the inguinal canal or the scrotum. This can also be named "scrotal cystocele".[4] It is more prevalent among men between 50 and 70 years of age.[5] Several different factors seem to be implicated in the adult, including loss of bladder tone, urinary outlet obstruction secondary to prostatic enlargement, prostatitis, bladder neck contracture or urethral stricture, and obesity. The trigone usually remains fixed in its normal position, even in cases of massive herniation.[6]

Men with a history of lower urinary tract symptoms and/or previous hernia repair have an increased risk of bladder herniation. Typically, patients present with scrotal or inguinal swelling, and occasionally, the classic complaint of double voiding.[7] Reduction of herniation after voiding is reported to be a more specific finding.[8,9] These clinical findings might remind bladder herniation. In this case, the diagnosis is incidental in a 62-year-old patient. There was no double voiding because the base of the hernia sac was wide. There was a left groin soft tissue enlargement due to hernia.

The diagnosis is made clinically with history, physical examination, intravenous pyelogram (IVP), cystography or during inguinal operation.[10] Lateral displacement of distal third of ureters, a small asymmetrical bladder associated with an inguinal hernia on IVP are characteristic findings for bladder hernia.[11] Intravenous pyelogram examinations should include erect, prone, delayed and post-voiding films.[12,13] Imaging modalities, including CT, are rarely used to outline the details of inguinal hernias in practice, because surgical consultants generally proceed to surgery without imaging.[7] Computed tomography findings include anterior and inferior angulation of the base of the bladder over the pubic bone. If the neck of the bladder is wide, the hernia entering the inguinal canal can be seen. If the neck of the bladder is narrow or when the bladder is not well distended, a large hernia may not be detected. The evaluation of the genitourinary system and other structures in the hernia

Fig. 2. *Pelvic CT scan demonstrates the left upper part of the bladder herniated into the inguinal canal. There is no contrast media in the herniated part of the bladder. Inguinal canal does not contain bowel.*

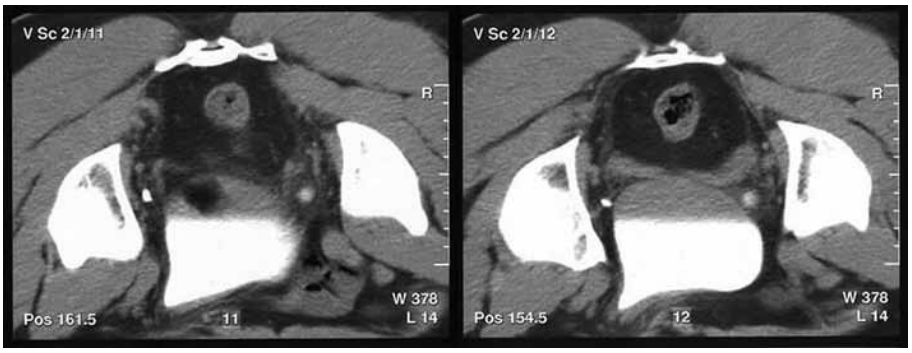

Fig. 3. *Pelvic CT scan obtained in the prone position revealed the bladder ear protruding into the inguinal canal filled with contrast media.*

sac with ruling out tumor or testicular involvement are advantages of CT.[8,12,14] Computed tomography might be used in patients with hernia reducing in size after voiding. Computed tomography obtained in prone position may help to demonstrate the contrast media fill-in, as seen in our case.

Shelef et al.[15] recommended imaging the bladder hernia by ultrasonography, CT, or cystography to solidify the diagnosis, facilitate surgical planning, and minimize complications. The role of cystoscopy is reported to be limited since it may identify a bladder outlet obstruction but has difficulty in visualizing an actual hernial sac opening.[16,17] Kumon et al.[18] recommended video urodynamics to characterize bladder hernia in the differential diagnosis of prostatism. On preoperative urodynamic findings, a relatively high opening pressure and long opening time were regarded as characteristic of bladder hernia. The simple addition of a urographic study with the patient standing was found to be helpful in screening for inguinal hernia. Video urodynamics were found to be mandatory to confirm the condition on radiography and urodynamics.

If an inguinoscrotal bladder hernia is detected incidentally during elective herniorrhaphy, either reduction or resection of the herniated bladder component should be performed, followed by standard hernia repair. The indications of bladder resection include the presence of bladder diverticulum, bladder necrosis or an incidental bladder tumor within the hernia.[1,16] Routine preoperative radiologic evaluation is recommended in men older than 50 years who have prostatism associated with an inguinal or femoral hernia.[19] Ciancio et al.[20] reported that only 7% of the patients in their series had a preoperative diagnosis, and 16% of the patients had the diagnosis after postoperative complications occurred. Gomella et al.[16] reported a 38% rate of unrecognized bladder injury during surgery where patients may present postoperatively with gross hematuria, sepsis or fistula formation. Preoperative awareness combined with urethral catheterization has been shown to minimize inadvertent injury.[16]

Even though inguinal herniation of the bladder is rare, it is often diagnosed intraoperatively during herniorrhaphy or is identified after intraoperative injury. To prevent the possible iatrogenic trauma that can occur during surgery, older patients for whom inguinal hernia repair is being planned should be evaluated for inguinal herniation of the bladder.

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