Massive inguinoscrotal herniation of the bladder with ureter: incidental demonstration on bone scan

Seyfettin Ilgan · Mehmet Ozguven · Mustafa O. Emer · Alper O. Karacalioglu

Abstract Inguinoscrotal herniation of the bladder is a rare clinical entity. The condition is often diagnosed incidentally or during the course of surgical repair of inguinal hernias. In a smaller number of cases, bladder hernia can be seen during nuclear medicine studies. We report a rare case of massive inguinoscrotal bladder herniation with ureter, causing urinary stasis on bone scintigraphy.

Keywords Inguinal hernia · Bladder · Bone scintigraphy

Introduction

Inguinal hernia is a common clinical problem in adults [1], and its contents are usually abdominal viscera surrounded by the peritoneum. As an extraperitoneal organ, the bladder cannot be contained in the hernia sac; however, it can be pulled into the inguinal canal by the sac, becoming a component of the hernia [2, 3]. This is an uncommon condition with a frequency between 1% and 4% of all inguinal hernias [4, 5].

Because the bladder hernia has no specific clinical findings, the diagnosis usually occurs incidentally or during the course of surgical repair of inguinal hernias. In a lesser number of cases, bladder hernia can be seen incidentally during nuclear medicine studies [6, 7] and may mimic metastasis on bone scan and fluoro-deoxy-glucose positron emission tomography (FDG-PET) studies [8, 9]. Here, we describe a massive inguinoscrotal herniation of the bladder incidentally detected during bone scintigraphy.

Case report

Bone scintigraphy was performed for staging in a 63-year-old man with lung cancer. Images, acquired in the supine position 3 h after the injection of 925 MBq (25 mCi) of technetium-99m hydroxymethylene-diphosphonate (HDP), showed bone metastasis in the left distal femur, as well as marked urinary stasis in the pelvis and ureter of the left kidney. Additionally, dense accumulation of activity in the suprapubic and infrapubic regions in the right groin compatible with the abdominal and scrotal portions of the bladder was noted (Fig. 1). The patient was asked to empty his bladder and static pelvic images were then acquired. Images demonstrated the disappearance of activity compatible with the intraabdominal part of the bladder whereas the activity in the scrotal portion of the bladder and stasis in the ureter and pelvis of the left kidney did not change significantly (Fig. 2). Additionally, posterior pelvic image showed migration of left distal ureter into the hernia sac, probably causing the distal ureteral obstruction and hence ureteral and pelvic stasis in the left kidney (Fig. 3).

Subsequent sonographic study confirmed the massive inguinoscrotal herniation of the bladder (Fig. 4), and pelvic and ureteral dilation in the left kidney. Renal function was normal except for slightly increased blood urea. The patient refused further examination of the inguinoscrotal hernia because of his malignancy. On inquiry, the patient revealed that he had been suffering from a reducible large mass of the right scrotum, daytime
frequency, and two-stage voiding for 2 years, and had been manually squeezing his scrotum during micturation to assist emptying the bladder.

Discussion

The urinary bladder can be contained in inguinoscrotal and, more rarely, in perineal [10] or obturator [11] hernia. The bladder is partially involved in 1%–4% of the inguinal hernias in the general population and in at least 10% of the patients over 50 years of age [4, 12]. Vesical hernias are most frequently limited to the inguinal canal, but the whole bladder and ureters can migrate into the scrotum (i.e., scrotal cystocele) causing obstruction and even acute renal failure [4, 13]. Although some cases are symptomatic with obvious clinical signs and symptoms, most patients are asymptomatic or have nonspecific symptoms due to coexisting prostatic hypertrophy or