

Case report

Olgu sunumu

An unusual cause of hydronephrosis: ureteroinguinal herniation

Hidronefrozun nadir bir nedeni: Üreteroinguinal herniasyon

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Summary

Ureteral herniation into the scrotum is infrequent and usually asymptomatic. This entity is mostly diagnosed at surgery or in the postoperative period. Radiological demonstration of this condition is important to avoid serious complications. We present a rare case of ureteroinguinal herniation with hydronephrosis accompanying an incarcerated inguinal hernia. A 45-year-old man presented with left inguinal and lower quadrant pain with progressive abdominal distention. Physical examination revealed a left-sided irreducible inguinal hernia and abdominal tenderness. There were no urinary complaints. Contrast-enhanced computed tomography (CT) showed left-sided hydronephrosis, inguinal hernia, mesenteric fat, and incarceration. The left ureter was dilated due to possible entrance into the scrotum with the hernia. In CT urography, there was no passage of contrast media to the ureter due to hydronephrosis. The descending part of the ureter was more dilated than the ascending part, which implied an obstruction due to kinking inside the hernia.

Key words: Hernia, inguinal/complications; tomography, X-Ray computed; ureteral diseases/diagnosis.

Özet

Üreterin skrotuma fıtık oluşturması oldukça nadir görülen ve genellikle belirti vermeyen bir durumdur. Bu durum genellikle ameliyat sırasında veya ameliyat sonrası dönemde anlaşılır. Bu durumun radyolojik tanısı olası ciddi komplikasyonların önlenmesi açısından çok önemlidir. Bu yazıda hidronefroza yol açan üreteroinguinal fıtık ve inkarsere kasık fıtığı saptanan bir olgu sunuldu. Kırk beş yaşında erkek hasta, sol kasıkta ve alt dördünde ağrı ve karında gerilme yakınmalarıyla başvurdu. Fizik muayenede düzeltilemeyen sol taraflı kasık fıtığı ve karında hassasiyet saptandı. Hastanın üriner yakınması yoktu. Kontrastlı bilgisayarlı tomografide sol tarafta hidronefroz, kasık fıtığı, mezenterik yağ ve inkarserasyon bulguları görüldü. Sol üreter, fıtıkla birlikte skrotuma girmesine bağlı olarak genişlemişti. Bilgisayarlı tomografi ile yapılan ürografide, hidronefroz nedeniyle üretere kontrast geçişi görülmedi. Üreterin inen kısmı, fıtık içindeki dolaşmaya bağlı tıkanıklık nedeniyle, çıkan kısımdan daha fazla genişlemişti.

Anahtar sözcükler: Fıtık, kasık/komplikasyon; bilgisayarlı tomografi; üreter hastalığı/tanı.

Submitted (Geliş tarihi): July 14, 2008 Accepted after revision (Düzeltilme sonrası kabul tarihi): November 10, 2008

Inguinoscrotal herniation of the ureter with resultant hydronephrosis is an extremely rare clinical condition.^[1] Many patients with ureteroinguinal herniation are asymptomatic, and the diagnosis is mostly incidental. Massive herniation of the ureter in the hernia sac may cause ureteral obstruction and hydronephrosis. Serious complications are known to occur during hernia surgery, if this entity is not diagnosed preoperatively.^[1,2]

Herein, we present a patient with left-sided ureteroinguinal herniation leading to hydronephrosis, discovered during computed tomography (CT) examination performed to evaluate left inguinal pain.

Case report

A 45-year-old man with left inguinal and lower quadrant pain with progressive abdominal distention for the last 24 hours was admitted to the emergency department. Physical examination revealed a left-sided irreducible inguinal hernia and abdominal tenderness. There were no urinary complaints. Laboratory tests were in normal limits. Further evaluation with contrast-enhanced CT showed left-sided hydronephrosis (Fig. 1a), inguinal hernia on the left side containing sigmoid loops, and mesenteric fat. There was fat stranding around the hernia contents (Fig. 1b) and increased contrast uptake of the herniated sigmoid loops suggesting incarceration. The left ureter was

dilated due to possible entrance into the scrotum with the hernia. In CT urography, there was no passage of contrast media to the ureter due to hydronephrosis, but the presence of a left-sided ureteroinguinal herniation was evident in thin-section reformatted images (Fig. 1c). The descending part of the ureter was more dilated than the ascending part, which implied an obstruction due to kinking inside the hernia.

Discussion

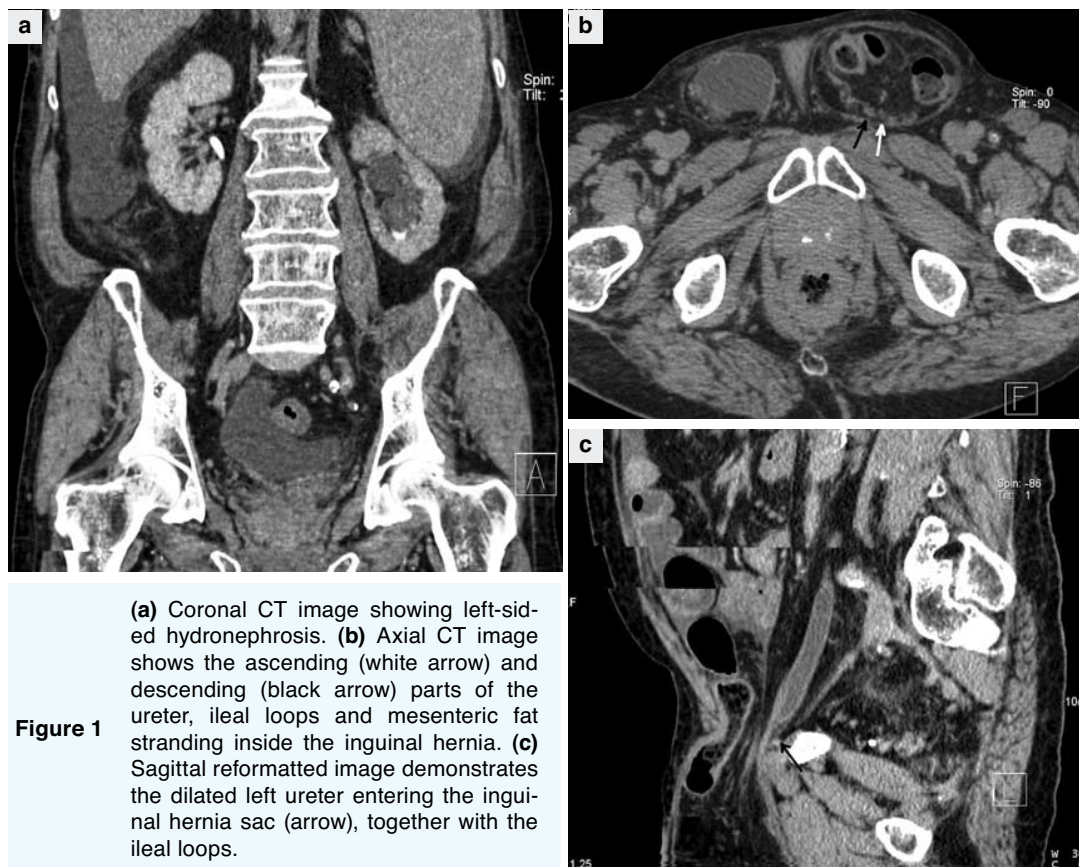
The presence of the bladder within an inguinal hernia is reported to occur in approximately 1% to 4% of all adult hernia cases, whereas ureteroinguinal herniation is a very rare entity. Ureteral herniation was first reported in 1880 by Leroux, as an autopsy finding.^[3] The number of reported ureteroinguinal hernias with hydronephrosis does not exceed one hundred cases.^[1-3]

Ureteroinguinal herniation can be seen in both genders, but males are more frequently affected. It is more often associated with inguinal compared with femoral hernias. Since the size of the hernia is rather large, incarceration is infrequent and most of them are clinically silent. Some urological symptoms such

as hematuria, flank pain, dysuria or nocturia may be seen, but they generally occur when there is an associated bladder herniation.^[2-4] On the other hand, as in our patient, signs of incarceration of the bowel loops may be evident both clinically and with imaging studies.

There are two types of ureteroinguinal hernias based on the presence or absence of a hernia sac. The most common variety is the paraperitoneal type, in which there is the ureter and a true peritoneal hernia sac which may contain abdominal viscera in the inguinal canal. This type is actually a sliding hernia and the ureter is drawn into the scrotum probably due to its adhesion to the posterior wall of the sac.^[1-3] Our patient had this type of hernia containing the ureter and the sigmoid loops, which was demonstrated by CT.

The second variant is the extraperitoneal form, which is often associated with congenital abnormalities of the urinary tract. This type involves only the ureter, without a peritoneal sac. Its etiology is uncertain and it is postulated that this type occurs congenitally when the developing ureteric bud fails to separate from the Wolffian duct.^[1,5]



Preoperative diagnosis of ureteral herniation is helpful to avoid surgical complications, the most common being ureteral injury. However, since ureteral association in a hernia is mostly asymptomatic, most patients are diagnosed at the time of surgery, or in the postoperative period due to urinary leakage. Ultrasound may be helpful in the diagnosis with its ability to demonstrate hydronephrosis and occasionally the herniated ureter in the inguinoscrotal region, but it has limited value to show the herniated ureter and a high index of suspicion is required. Nevertheless, in the present case, ultrasound could be the first step in diagnostic imaging if urinary symptoms were present. Intravenous pyelography may aid the diagnosis showing the superimposed afferent and efferent portions of the ureter in the hernia with the pathognomonic 'curlicue ureter' sign.^[1]

Computed tomography urography with three-dimensional reformatted images is highly effective in the diagnosis of ureteroinguinal herniation and associated abnormalities such as hydronephrosis or congenital urinary anomalies.^[1,3] Magnetic resonance urography is also very efficient with multiplanar imaging capability and high soft-tissue resolution, without exposure to ionizing radiation.

In conclusion, ureteroinguinal hernia is a very rare condition that is mostly asymptomatic which renders preoperative diagnosis difficult. As in the presented case, symptoms may occur due to strangulation of

hernia contents, or less frequently, the patient complains of nonspecific urinary symptoms. Computed tomography is the preferred imaging modality with high spatial resolution, not only to detect herniation but also to show associated pathologies.

References

1. Akpınar E, Türkbey B, Özcan O, Akdoğan B, Karcaaltınçaba M, Özen H. Bilateral scrotal extraperitoneal herniation of ureters: computed tomography urographic findings and review of the literature. *J Comput Assist Tomogr* 2005;29:790-2.
2. Oruç MT, Akbulut Z, Özozan O, Coşkun F. Urological findings in inguinal hernias: a case report and review of the literature. *Hernia* 2004;8:76-9.
3. Eilber KS, Freedland SJ, Rajfer J. Obstructive uropathy secondary to ureteroinguinal herniation. *Rev Urol* 2001;3:207-8.
4. Pollack HM, Popky GL, Blumberg ML. Hernias of the ureter. An anatomic-roentgenographic study. *Radiology* 1975;117:275-81.
5. Giglio M, Medica M, Germinale F, Raggio M, Campodonico F, Stubinski R, et al. Scrotal extraperitoneal hernia of the ureter: case report and literature review. *Urol Int* 2001;66:166-8.

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