Ureterocele in adult man

Clinical History:

A 42-year-old man was admitted to first aid for onset of left flank pain for a few days. The patient was not subjected to any illness or medical investigations in the past. However, he complained of frequent urination (pollakiuria) since a long time.

Imaging Findings:

The ecography showed a severe cortical thinning of the left kidney due to renal atrophy and a significant dilatation of the renal pelvis with ballooned calyces (clearly noticeable). Moreover a well demarcated cyst-like mass (5 cm in size), bordered by very thin walls, was evident in the left postero-lateral portion of bladder. In the left flank we saw a tubular anechoic structure due to dilatation of the left ureter.

Subsequently, the patient underwent a CT that confirmed the severe thinning of the left renal parenchyma, the noticeable hydroureteronephrosis, and showed a partial double collecting system, both remarkably dilated and a bulging distal portion of the ureter, leading into the bladder lumen. He did not excrete any contrast media in the delayed phase.

Based on this evidence, a diagnosis of utererocele was made and the urological consultation suggested a radical nephrectomy.

Discussion:

The term ureterocele refers to the congenital saccular dilatation of the terminal ureter induced from the persistence or incomplete dissolution of Chwalla's membrane with a resulting ureter meatal obstruction [1-4].

The anomaly can be detected at a very early stage by perinatal screening or, if the obstruction is minimal and without symptoms, it can be found in older children or adults.

The most common symptoms are: urinary tract infection, failure to thrive, abdominal pain, hematuria.

In adulthood, inflammation, kidney stones or cancer may cause an obstruction and dilatation of ureter, mimicking an ureterocele; this condition is named pseudoureterocele or acquired form [5].

The incidence of ureterocele is approximately 1 in every 4,000 children, prevalent in females and on the left side; however in 10% of cases it is bilateral and its size varies from a few mm to several cm [6].

According to the renal collecting system, associated (unique or dual) ureteroceles are classified in single or duplex,
both can be intra or extravesical. Based on the normal or abnormal urethral insertion they are classified into orthotopic or ectopic [6].

Generally, ectopic ureterocele is associated with a duplex collecting system, while an orthotopic ureterocele is associated with a simplex collecting system, which is usually found in adults.

In our case an intravesical orthotopic simple ureterocele was associated with two ureters fused together to form a single ureteral orifice.

Imaging techniques are crucial to detect this condition and all imaging modalities are able to recognize it. Traditionally, urography was used to evaluate the urinary tract and to detect ureteral lesions. A ureterocele could be seen with a characteristic aspect (cobra-head sign or spring onion) caused by a radiolucent halo produced by the ureterocele's wall inside the bladder filled with contrast media [7]. Because of technology progresses, urography has been largely replaced by CT and echography.

In echography, a ureterocele is seen as a cyst-like intravesical mass, near the margin of trigone and contiguous with a dilated ureter.

The wall of the ureterocele is thin and echogenic and its base is usually narrow.

Enhanced CT and MRI may be helpful to better delineate urinary tract anatomy, especially to identify duplicated renal systems, the degree of hydroureter, the cortical thickness and the functional ability of the kidneys to excrete contrast material [3].

Surgical intervention is required to relieve obstruction and preserve the renal function, to prevent infection or reflux. Transurethral puncture/incision is often enough to solve simpler cases; open procedures are reserved for more complex types and include partial/total nephrectomy, ureterectomy and bladder reconstruction [8-9].

**Differential Diagnosis List:** Ureterocele in adult man, Pseudo-ureterocele, Bladder Mass, Hutch diverticulum, Urethral prolapse, Urethral caruncle

**Final Diagnosis:** Ureterocele in adult man

**References:**


Peters CA, Schlussel RN; Cathy Mendelsohn Ectopic ureter, ureterocele and other anomalies of the ureter. Campbell-Walsh Urology. 10th edi 3235-66.


Description: Ultrasound of the bladder shows: typical appearance of ureterocele Origin: U.O.C radiologia area nord AUSL BOLOGNA
Description: Ultrasound of the left kidney (longitudinal view) shows: a marked dilatation of the renal pelvis and calyces

Origin: U.O.C radiologia area nord AUSL BOLOGNA
Description: Ultrasound of the left kidney (longitudinal view) shows: a severe thinning of the renal parenchyma with marked dilatation of the renal pelvis and calyces. 

Origin: U.O.C. radiologia area nord 

AUSL BOLOGNA
Description: Ultrasound of left flank shows: a tubular anechoic structure caused by dilatation of left ureter. Origin: U.O.C radiologia area nord AUSL BOLOGNA
Figure 2

a

Description: Unenhanced CT of the pelvis (axial view) shows: a cistic structure within the bladder with relatively isodense subtile wall. Origin: U.O.C radiologia area nord AUSL BOLOGNA

b

Description: Enhanced CT of the pelvis (delayed fase, axial view) shows: a cistic structure within the bladder with lumen separated from the contrast-filled bladder. Origin: U.O.C radiologia area nord AUSL BOLOGNA
Description: Unenhanced CT shows: dilatation of the double renal collecting system in left side (red arrows) 
Origin: U.O.C radiologia area nord AUSL BOLOGNA

Description: Enhanced CT (delayed fase, MPR coronal view) shows: double renal collecting system in left side (red arrows). Normal aspect of right ureter (yellow arrow) 
Origin: U.O.C radiologia area nord AUSL BOLOGNA
Description: Enhanced CT (delayed phase, MPR coronal view) shows: absence of contrast media renal excretion of left kidney by renal atrophy and the dilated distal ureter protruding into the bladder. Origin: U.O.C radiologia area nord AUSL BOLOGNA
Description: Enhanced CT (delayed fase, 3D view) shows: absence of contrast media renal excretion on left side. Origin: U.O.C Radiologia area nord AUSL BOLOGNA.
Description: Enhanced CT (delayed phase, sagittal view) shows a normal insertion of ureter in the bladder (Blue arrow). Origin: U.O.C radiologia area nord AUSL BOLOGNA