SEMINAL VESICLE CYST WITH ECTOPIC URETERAL INSERTION AND IPSILATERAL RENAL DYSPLASIA – AN UNEXPECTED DIAGNOSIS

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SUMMARY – An extremely rare case of seminal vesicle cyst associated with ipsilateral renal dysplasia and ectopic ureter is presented. A 36-year-old patient underwent nephroureterovesiculectomy. Considering the clinical and imaging profile of the patient, a diagnosis of ureterocele with megaureter was initially suspected, but intraoperative findings and definitive pathological analysis of the specimen revealed right renal dysplasia with ectopic ureter opening into seminal vesicle cyst. The clinical and therapeutic peculiarities of this rare condition are presented and the literature on this topic is reviewed.

Key words: *Urinary tract – surgery; Kidney – abnormalities; Seminal vesicles – abnormalities; Case report*

Introduction

The association of seminal vesicle cysts and upper urinary tract malformations is uncommon, with less than 200 cases in the literature[1], and it is even rarer when combined with ectopic ureter and renal dysplasia[2-5]. An unexpected case of a right seminal vesicle cyst associated with ectopic ureter, and dysplastic renal tissue that had initially presented as ureterocele with megaureter is reported to draw attention of urologists and radiologists to this rare entity and to describe the clinical and therapeutic aspects of the disease.

Case Report

A 36-year-old man presented with symptoms of bladder irritation and a history of right groin pain. There was no history of fever, hematuria or hematospermia. On physical examination, both testes were normal. Laboratory data including urinalysis and culture were unremarkable. Kidney and bladder ultrasonography revealed absence of the right kidney and a hypoechoic intravesical cystic mass at the right lateral base of the bladder (Fig. 1a). Excretory urography showed a solitary left kidney with a normal collecting system and a large, smooth filling defect in the right bladder base resembling ureterocele (Fig. 1b). The diagnosis of ureterocele was also suspected on cystoscopy with considerable elevation of the right hemitrigone by a large, cystic mass. Magnetic resonance imaging (MRI) of the abdomen and pelvis was performed to locate the right kidney and also for better characterization of the cyst. Pelvic MRI showed a large cystic lesion, which measured 7.0 cm in diameter, arising in the region of the right seminal vesicle, and a tortuous ureter-like tube entering the small kidney in the lower lumbar region (Fig. 1c). The mass showed low T1-weighted and high T2-weighted signal intensity compatible with increased protein concentration. The mass was considered to be ectopic, atrophic kidney with megaureter and ureterocele. The patient underwent nephroureterovesiculectomy. The whole specimen was dissected and removed together with the right ureter, kidney remnant and the seminal vesicle transvesically. Pathological analysis of the specimen disclosed a small kidney remnant with fetal characteristics and ureter-like

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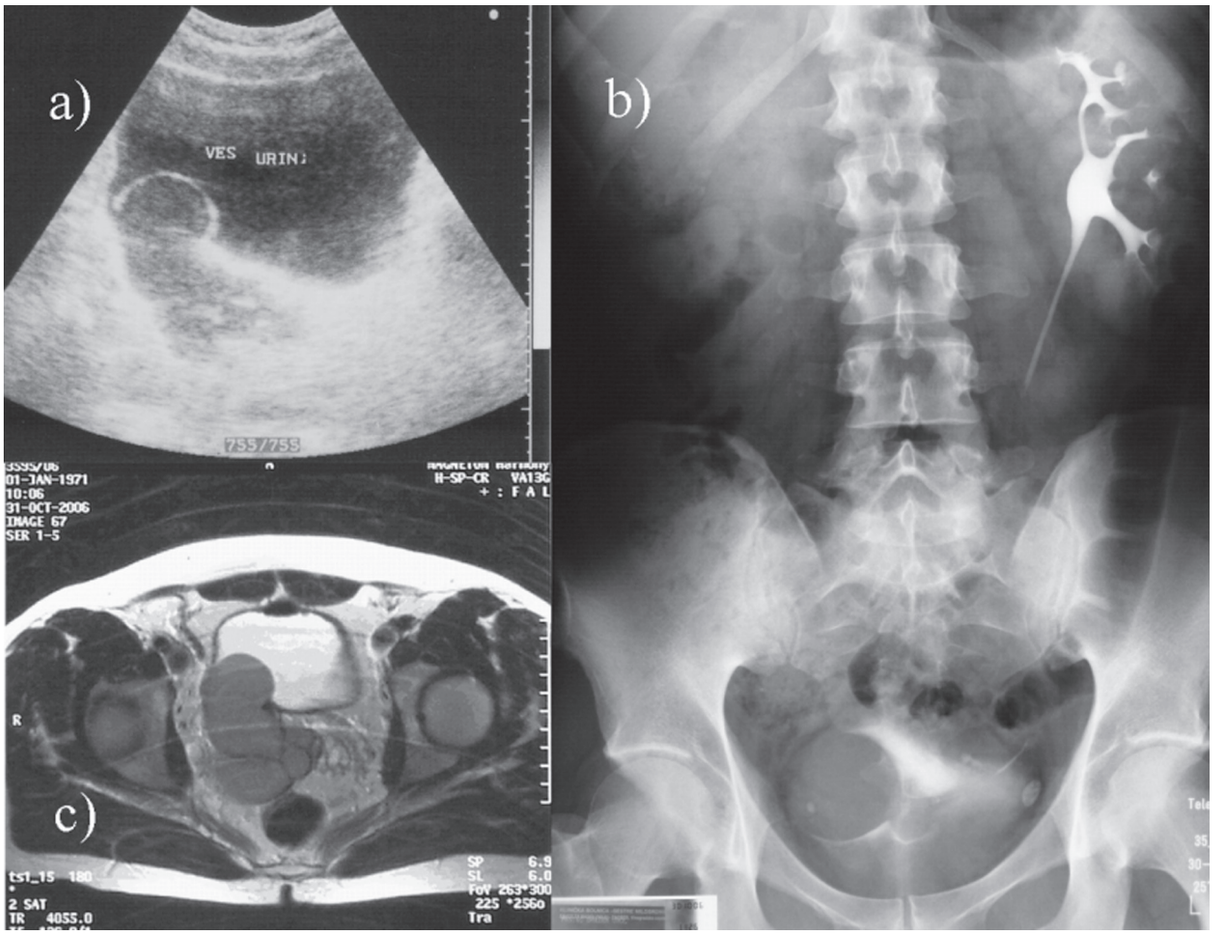

Fig. 1. (a) Sonography of the urinary bladder showing an intravesical hypoechioc cystic mass; (b) intravenous (excratery) urography at 15 min showing absence of the right kidney and collecting system, hypertrophy of the left kidney, with a large, cystic filling defect of the urinary bladder resembling right ureterocele; (c) enhanced transverse T2-weighted magnetic resonance image of the pelvis shows a large tortuous and cystic structure with protein content, measuring 7 cm in greatest dimension, causing impression on the posterior right lateral aspect of the bladder and arising from the right seminal vesicle.

tube ectopic into large seminal vesicle cyst (Fig. 2). Definitive diagnosis was seminal vesicle cyst with ectopic ureteral insertion and ipsilateral renal dysplasia. The patient did well postoperatively, and his symptoms completely resolved.

Discussion

Congenital or acquired seminal vesicle cysts involve less than 0.005% of the population[6]. Congenital cysts associated with ipsilateral malformation of the upper urinary tract were first described by Zinner in 1914[7]. While seminal vesicle cysts may infrequently have an acquired origin, probably related to an obstruction in the ejaculatory duct, the vast majority of them are congenital and result from a developmental anomaly in the wolffian duct[8]. Approximately two thirds of seminal vesicle cysts are associated with ipsilateral renal agenesis or dysplasia[8]. In the absence of associated renal anomalies, differentiation between congenital and acquired vesical cysts is not possible.

Ipsilateral renal dysplasia and cyst of the seminal vesicle are associated due to the common origin of the ureteral bud and seminal vesicle from the mesonephric (wolffian) duct[9]. If an insult occurs approximately at the 12th gestational week, the embryogenesis of the kidney,

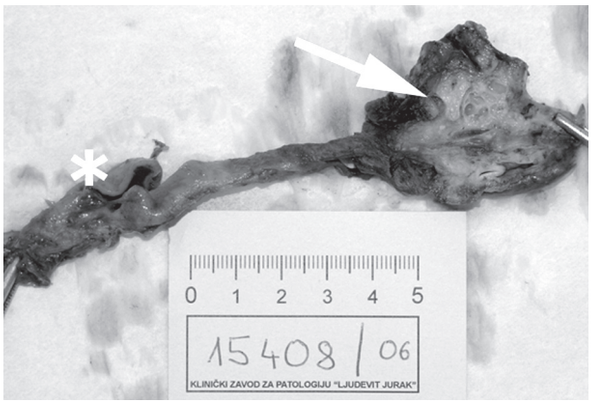

Fig. 2. The gross resected specimen containing a cystic mass of the left seminal vesicle (asterisk) with ectopic ureteral insertion and kidney remnant (arrow).

ureter, seminal vesicle and vas deferens can be altered[9]. If the ureteral bud arises in a more cephalic position off the mesonephric duct, delayed absorption of the caudal mesonephric duct will result in the distal ureteral bud emptying into mesonephric duct derivatives such as seminal vesicle, as in our case[8,9].

The diagnosis of these malformations is established mostly at the time of the greatest sexual activity when seminal fluid accumulates in the seminal vesicle as the result of incomplete drainage. Cysts of the seminal vesicles may remain asymptomatic and are discovered incidentally, or they present with symptoms related to voiding or chronic epididymitis and prostatitis[8,10]. Other clinical symptoms include hematuria; nocturia; urinary frequency; urgency; lower abdominal, perineal, and ejaculatory pain; and hematospermia[8].

This diagnosis can be made with a combination of urography, voiding cystography, ultrasonography, computerized tomography, or MRI scanning. Invasive studies could include percutaneous needle puncture, which would be diagnosed in a mature patient by detecting spermatozoa. Contrast media injections might indicate the anatomic relationships between the cyst and the adjacent structures.

Most authors conclude that MRI is the best imaging test to noninvasively achieve a clear diagnosis before surgery, and should be the procedure of choice when this complex condition is suspected[6,9,10]. Differential diagnosis might include hydronephrotic pelvic kidney, cysts of the prostate, ejaculatory duct, müllerian duct, or tumors arising from the bladder, prostatic urethra, or retroperitoneal structures.

Treatment of seminal vesicle cysts is reserved for symptomatic cases and can be managed by surgical excision, transurethral deroofing, transvesical drainage, needle aspiration or laparoscopic approach[10]. Operative treatment of more complex anomalies involves en bloc excision of the seminal vesicle cyst, ipsilateral ureter and dysplastic renal tissue, as in our case.

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Sažetak

CISTA SJEMENOG MJEHURIĆA S EKTOPIČNIM PRIPOJEM MOKRAĆOVODA I ISTOSTRANOM BUBREŽNOM DISPLAZIJOM – NEOČEKIVANA DIJAGNOZA

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Prikazan je vrlo rijedak slučaj bolesnika s cistom sjemenog mjehurića udruženom s istostranom bubrežnom displazijom i ektopičnim mokraćovodom. U 36-godišnjeg bolesnika učinjena je nefroureterovezikulektomija. Inicijalna dijagnoza temeljena na kliničkim i radiološkim podacima govorila je u prilog ureterokele s megaureterom, no intraoperacijski nalaz i definitivna patohistološka analiza uzorka razotkrili su ektopiju mokraćovoda u cistu sjemenog mjehurića. Prikazane su kliničke, dijagnostičke i terapijske osobitosti ove rijetke anomalije. Iznesen je i pregled relevantne literature.

Ključne riječi: *Genitalne bolesti, muški – kirurgija; Bubreg – nenormalnosti; Sjemene vezikule – nenormalnost; Prikaz slučaja*