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Case Study of the Month

Renal Aplastic Dysplasia and Ipsilateral Ectopic Ureter Obstructing the Seminal Via: A Possible Cause of Male Infertility

Antonio Carbone [a], *Giovanni Palleschi* [a], *Giulio Tomiselli* [a], *Maurizio Inghilleri* [b], *Rocco Rago* [c], *Andrea Lenzi* [d], *Antonio Luigi Pastore* [a,*]

[a] *Neuro-Urology Unit, University of Rome "La Sapienza" Polo Pontino, Rome, Italy*
[b] *Department of Neurosciences, University of Rome "La Sapienza", Rome, Italy*
[c] *Andrology Unit, S. Maria Goretti Hospital, Latina, Italy*
[d] *Department of Endocrinology, University of Rome "La Sapienza", Rome, Italy*

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Abstract

Few cases of unilateral renal agenesis associated with ipsilateral seminal vesicle ectasia or cyst have been reported. Two cases of unilateral renal aplastic dysplasia and ipsilateral ectopic ureter opening in the ejaculatory ducts associated with infertility secondary to bilateral obstruction of the seminal via are reported. Clinical and physical assessment including transrectal ultrasound and magnetic resonance imaging are proposed as a comprehensive algorithm for the diagnostic evaluation of the pelvic cystic masses.

* Corresponding author. Via Ridolfino Venuti 73, 00162 Rome, Italy. Tel. +39339396485; Fax: +390773693055.
E-mail address: antopast@hotmail.com (A.L. Pastore).

1. Introduction

Renal agenesis has been supposed as the predominant cause of congenital solitary kidney and it is observed with an incidence of 1:1300 [1]. An ectopic ureter entering into a cystic seminal vesicle is rarer [2–4].

This paper reports two cases of unilateral renal aplastic dysplasia and ipsilateral ectopic ureter opening in the ejaculatory ducts associated with infertility secondary to bilateral obstruction of the seminal via.

2. Case report 1

A 43-yr-old man presented with recurrent renal pain episodes and infertility. Seminal parameters were volume 1.0 ml, pH 7.4, rare atypical spermatozoa, and immature sperm cells. Follicle-stimulating

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hormone (FSH), luteinising hormone (LH), testosterone, dihydrotestosterone (DHT), sex hormone-binding globulin (SHBG), prolactin (PRL), and estrogen (E) levels were normal.

Digital rectal examination (DRE) revealed a soft bulking mass above a normal prostate. Renal and bladder ultrasonography (US) showed the absence of the right kidney and an incidental anechoic tubular paravesical complex. Transrectal ultrasound (TRUS) confirmed the anechoic paravesical pseudocystic tubular structure with a prevalent cephalic lateroventral extraprostatic extension and a caudal intraprostatic blind end (Fig. 1). This finding was assumed to be a ureteral embryogenic malformation.

The ipsilateral seminal vesicle seemed to be only partially represented and the TRUS did not show any communication between the seminal via and the ectopic ureter.

Urethrocystography showed a minimal ventral displacement of the prostatic urethra probably related to the presence of the embryogenic malformation.

A pelvic high-resolution phased-array probe magnetic resonance imaging (MRI) study (Fig. 2) supported the ureteral embryogenic origin of the structure showing the presence of a communication path between the embryogenic ectopic ureter and the right seminal via, which was ectatic cephalad to the ipsilateral seminal vesicle. The left seminal via

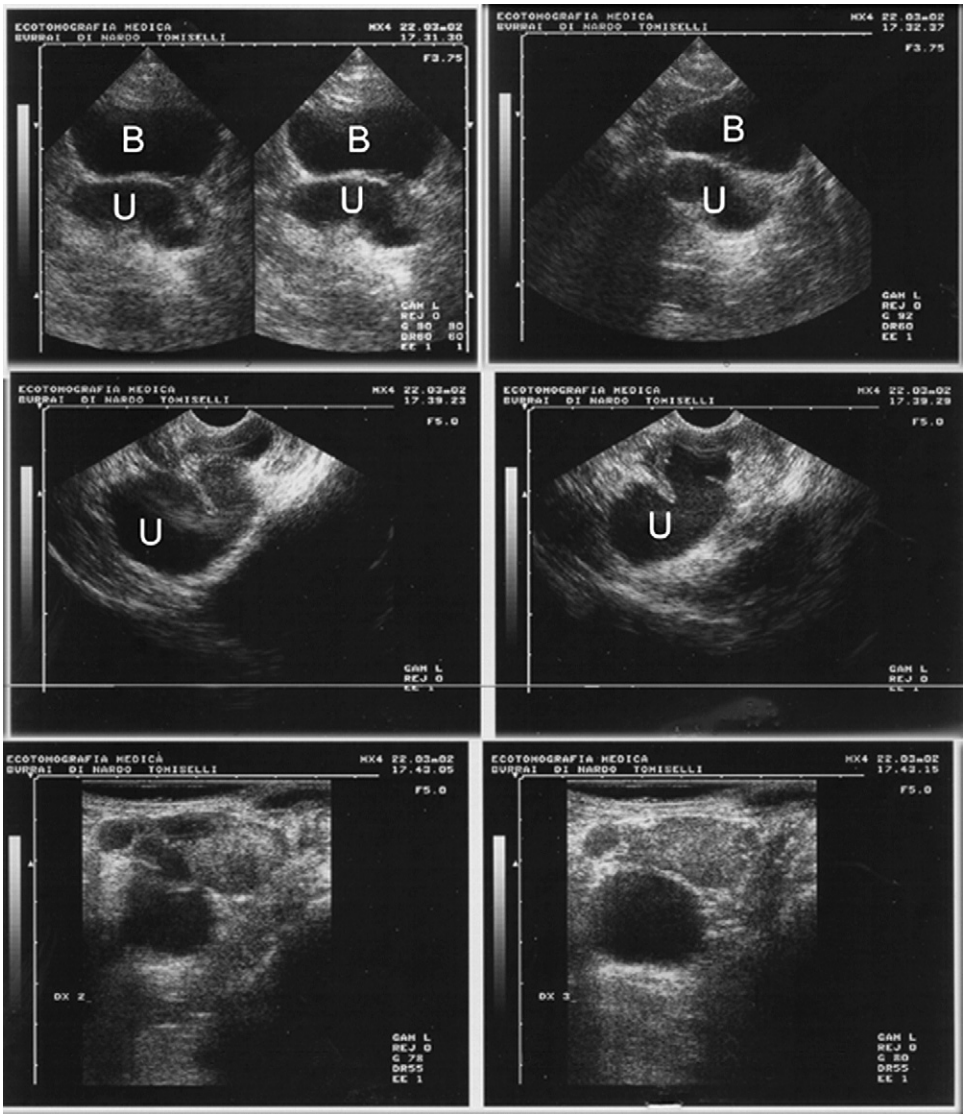

Fig. 1 – Transurethral ultrasound. The anechoic paravesical pseudocystic structure (U) with extraprostatic extension and a caudal intraprostatic blind end runs through the medial and posterior portion of the prostatic base to reach the colliculus.

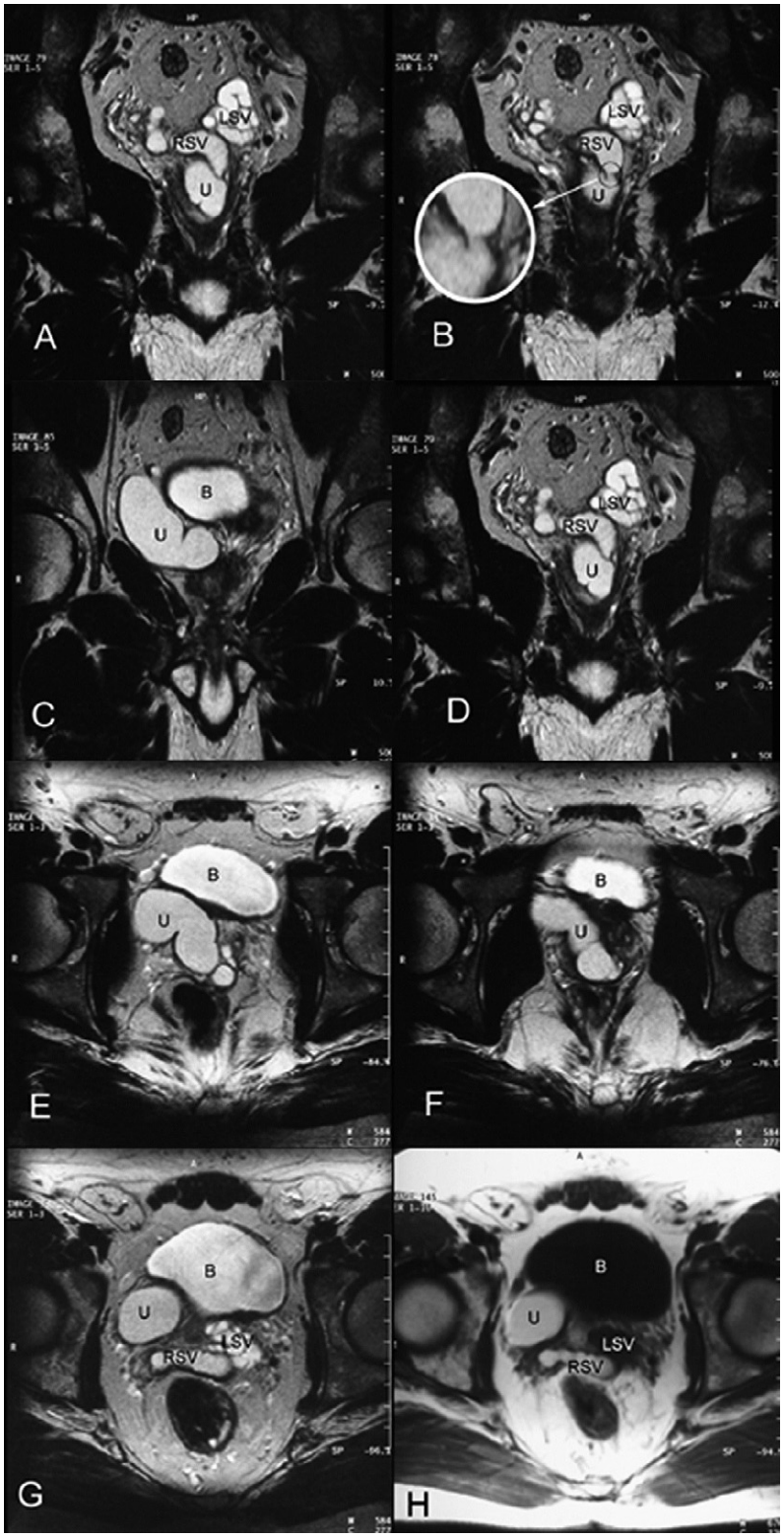

Fig. 2 – (A) T2-weighted coronal scan. Ectopic ureter (U) passes through the posterior wall of the bladder and the right seminal vesicle (RSV). Ectatic left seminal vesicle (LSV) is compressed by the caudal intraprostatic end of the ectopic ureter. (B) T2-weighted coronal scan shows the communication path between the ectatic ureter and the right seminal vesicle (circled). (C and D) T2-weighted coronal scans. Caudal end of the ectatic ureter passes through the posterior wall of the bladder (B), enters the prostate base, and passes through the prostate to the colliculus. (E and F) T2-weighted axial scans. (G) T2-weighted axial scan. (H) T1-weighted axial scan. Normal hyperintense pattern in T2 sequences of both seminal vesicles and ectatic ureter. T1 sequences show a persistent abnormal hyperintense pattern of ureter and right seminal vesicle, whereas left seminal vesicle shows a normal hypointense pattern.

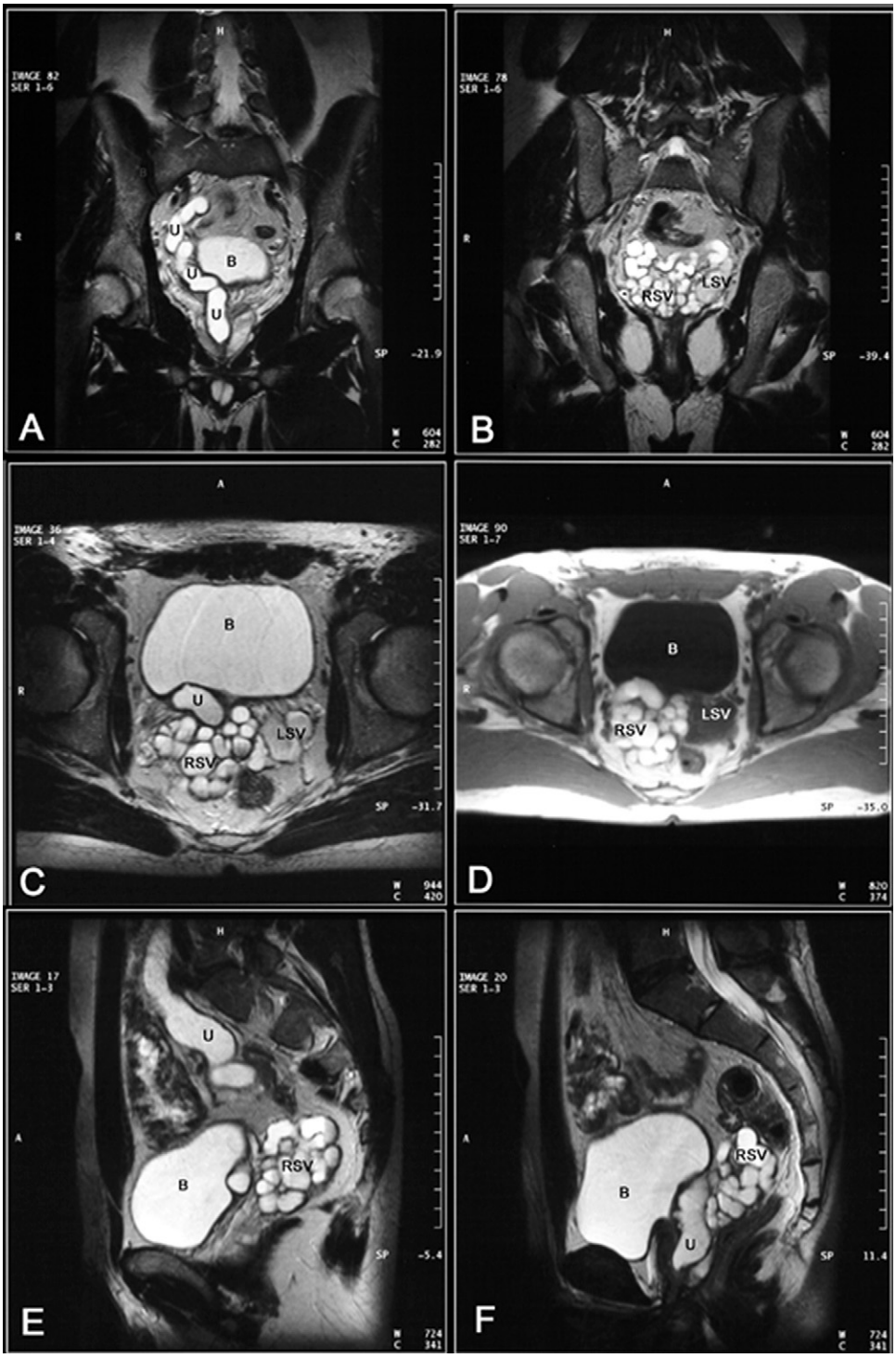

Fig. 3 – T2 magnetic resonance imaging (MRI) coronal, axial, and sagittal sequences (A–C, E and F). A right dysplastic ectopic ureter has two blind ends (U) and a huge ectasia of the right (RSV) and left (LSV) seminal vesicles. Right and left seminal vesicles and the ectatic ureter show hyperintense pattern in T2 sequences (C). T1 sequences show a persistent hyperintensity of the right vesicle and normal hypointensity of the left (D). T2 MRI sagittal sequences (E and F) show the two blind ends of the ectopic ureter (U), the proximal end in the retroperitoneum (E), and the caudal end (F) passing through the posterior wall of the bladder and the seminal vesicle and entering the prostate base to reach the colliculus (urethral axis).

and vesicle were both ectatic cephalad to a deferential compressed ampulla and obstructed by the intraprostatic end of the ectopic ureter (Fig. 2).

3. Case report 2

A 24-yr-old man had azoospermia, a right congenital solitary kidney, and a firm testicular nodule. Seminal parameters were: volume 0.6 ml, pH 6.9, azoospermia with immature germ cells. FSH, LH, testosterone, DHT, SHBG, PRL, and E levels were normal. DRE showed a soft bulking mass above the prostate.

Testicular colour Doppler US evaluation suggested a haemorrhagic origin of the nodule. TRUS showed a hypoechoic tubular structure inside the prostate and a bilateral seminal vesicle ectasia. Explorative testicular surgery confirmed the necrosis of the parenchyma and orchiectomy was performed.

Pelvic high-resolution phased-array probe MRI confirmed a right dysplastic ectopic ureter with two blind ends (Fig. 3). The caudal end entered the prostatic base in the right paramedian side with a 1.5-cm wide lumen ending near the colliculus. The huge ectasia of the right seminal vesicle was confirmed and a communication path between the ureter and the seminal tract was demonstrated. The left seminal via was ectatic due to the compression of the ejaculatory duct. Right and left seminal vesicles showed different magnetic signals related to their liquid content. T2-weighted sequences revealed the normal hyperintense pattern of both seminal vesicles and of the ectatic ureter. T1-weighted sequences showed different behaviour of the signal, with persistent right hyperintensity and normal left hypointensity (Fig. 3).

EU-ACME question

Please visit www.eu-acme.org/europeanurology to answer the below EU-ACME question on-line (the EU-ACME credits will then be attributed automatically). The answer will be given in *Case Study of the Month: Part 2*, which will be published in next month's issue of *European Urology*.

Question:

Which statement regarding male pelvic cyst malformation is correct?

A. Most of patients are asymptomatic.
B. Male pelvic cystic malformations may result from a too cranially sprouting of the ureteral bud with delayed absorption and ectopic opening of the distal end of the ureter.
C. Vasovesiculography represents the best diagnostic tool.
D. Malformations are mostly diagnosed in elderly patients.

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