Case Study of the Month

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

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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
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.](image-url)
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 defer-
ential 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 sug-
gested 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 necro-
sis of the parenchyma and orchiectomy was per-
formed.

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.

Pelvic US showed a soft bulking mass above
the prostate. TRUS showed a hypoechoic tubular
structure inside the prostate and a bilateral seminal
vesicle ectasia. Explorative testicular surgery
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Pelvic high-resolution phased-array probe MRI
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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 pat-
tern of both seminal vesicles and of the ectatic
ureter. T1-weighted sequences showed different be
haviour of the signal, with persistent right hyper-
intensity and normal left hypointensity (Fig. 3).

EU-ACME question

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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 diag-
nostic tool.
D. Malformations are mostly diagnosed in elderly
patients.

References

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vesicle cyst associated with ipsilateral renal agenesis.
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