

C A S E R E P O R T

Prostate utricle cyst as a cause of haemospermia in a young adult: a case report

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Abstract. *Background and aim:* Prostatic utricle cyst is an embryological remnant of the Muller duct system, resulting from an incomplete regression of these structures during embryological development. Most of the time such congenital alteration is asymptomatic, but may sometimes present with various signs and symptoms, from urinary tract infections to episodes of haemospermia in a small percentage of cases. *Methods:* We reported the case of a 42-years-old man who suffered from recurrent episodes of haemospermia for about 20 years; the instrumental examinations, first of all TRUS and then MRI evaluation, demonstrated the presence of a cystic formation, located in the posterior median site of the prostate closely to the prostatic urethra. *Results:* The cytological examination on the liquid taken by transperineal US-guided fine-needle aspiration, confirmed the presence of seminal fluid and normal prostatic tissue consistent with the diagnostic hypothesis of prostatic utricle cyst. *Conclusions:* It's important to recognize the imaging characteristics of the prostatic utricle cyst since it may be one of the possible benign causes of hematospermia in the young adult subject. (www.actabiomedica.it)

Key words: prostate utricle cyst, genitourinary imaging, ultrasound, magnetic resonance imaging, case report

Running Title: Hematospermia in an utricle cyst

Introduction

The normal development of the male genitourinary tract foresees on the one hand the maturation and differentiation of the Wolff's ducts and, on the other hand, the involution of the Muller's ducts which, on the contrary, represent the precursors of the female apparatus. Both structures coexist in the embryo until the sixth week of intrauterine development, when the diversification of the sexual organs is triggered.

However, the lack or incomplete involution of Muller's ducts in male subjects, not so frequent,

determines the development of anatomical anomalies of the genitourinary tract and incomplete residual structures, such as the prostatic utricle cyst.

Despite this congenital alteration is most often asymptomatic, it may sometimes occur with various sign and symptoms such as urinary tract infection, pain, post-voiding incontinence, recurrent epididymitis and finally haemospermia in a small percentage of cases. Because of the aspecificity of the symptoms, it often happens that this congenital pathology is misdiagnosed and that the patient is subjected for years to palliative treatment completely useless. To know the imaging features and the

anatomic location of the possible congenital anomalies of the male urinary tract becomes, therefore, of vital importance for a correct diagnosis and therapeutic planning. Our case report focuses its attention on haematospermia, as a rare symptom, and the exact anatomical location of the utricle cyst as an explanation of the symptoms.

Case Report

An Italian 42-year-old man was referred to our institution for recurrent episodes of haematospermia, painful ejaculation and recurrent episodes of pelvic pain resembling prostatitis. The patient did not report further symptoms, especially macrohematuria or dysuria.

Clinical examination of the abdomen and genital organs showed no abnormalities as well as microbiological and parasitological laboratory tests.

Subsequently, the patient underwent further instrumental examinations, first of all TRUS (transrectal ultrasound) which demonstrated the presence of a roundish anechoic formation of probable cystic nature, measuring about 47 mm in the axial plan and 26 mm in the cranial-caudal axis, located in the posterior median site of the prostate closely to the prostatic urethra. (Fig. 1)

For a more in-depth evaluation of the prostate gland, it was decided to complete the diagnostic procedure with prostatic magnetic resonance imaging (MRI), a diagnostic investigation that provides a better morphological evaluation of the gland, with high spatial and functional resolution. The MRI evaluation, performed in a high-field unit of 1.5 Tesla with an endorectal coil, confirmed the cystic nature of the lesion as well-delimited median intraprostatic structure, adjacent to the ejaculatory ducts and characterized by hyperintense signal either in T2- and T1-weighted sequences due to recent episode of haematospermia. (Fig. 2)

At the end, the patient was subjected to a transperineal US-guided fine-needle aspiration and the yellowish serous fluid taken was analyzed. The cytological test showed evidence of seminal fluid with normal prostate tissue and particles consistent with the utricular tissue.

Due to the cytological result of the cyst's content, its morpho-structural imaging characteristics and the young age of the patient, he was diagnosed with cyst of the prostatic utricle, whose large size also explains the

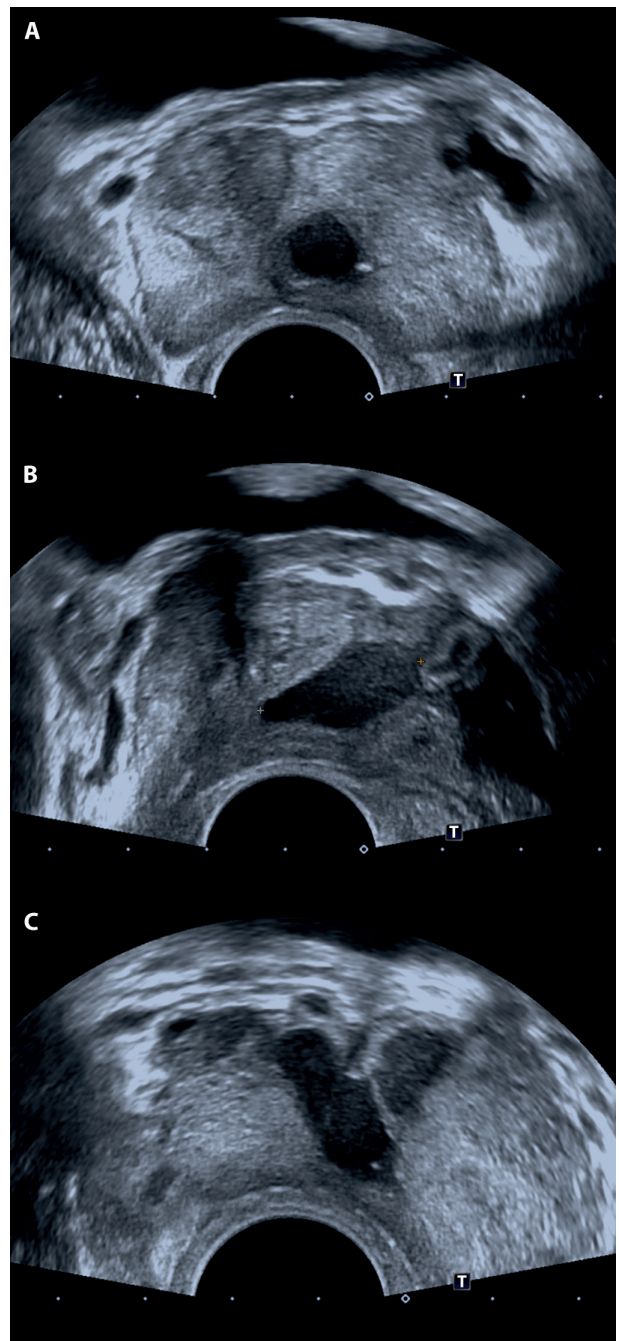


Figure 1. Prostatic utricle cyst in a 42-year-old man. Axial (a), sagittal (b), and coronal (c) three-dimensional (3D) transrectal US images show a midline hypoechoic cystic lesion, which does not extend above the base of the prostate.

prostatitis-like symptoms caused by a direct compression exerted by the cyst itself on the prostatic urethra.

Finally, patient was treated with endoscopic utricle catheterization and aspiration. The advantage of

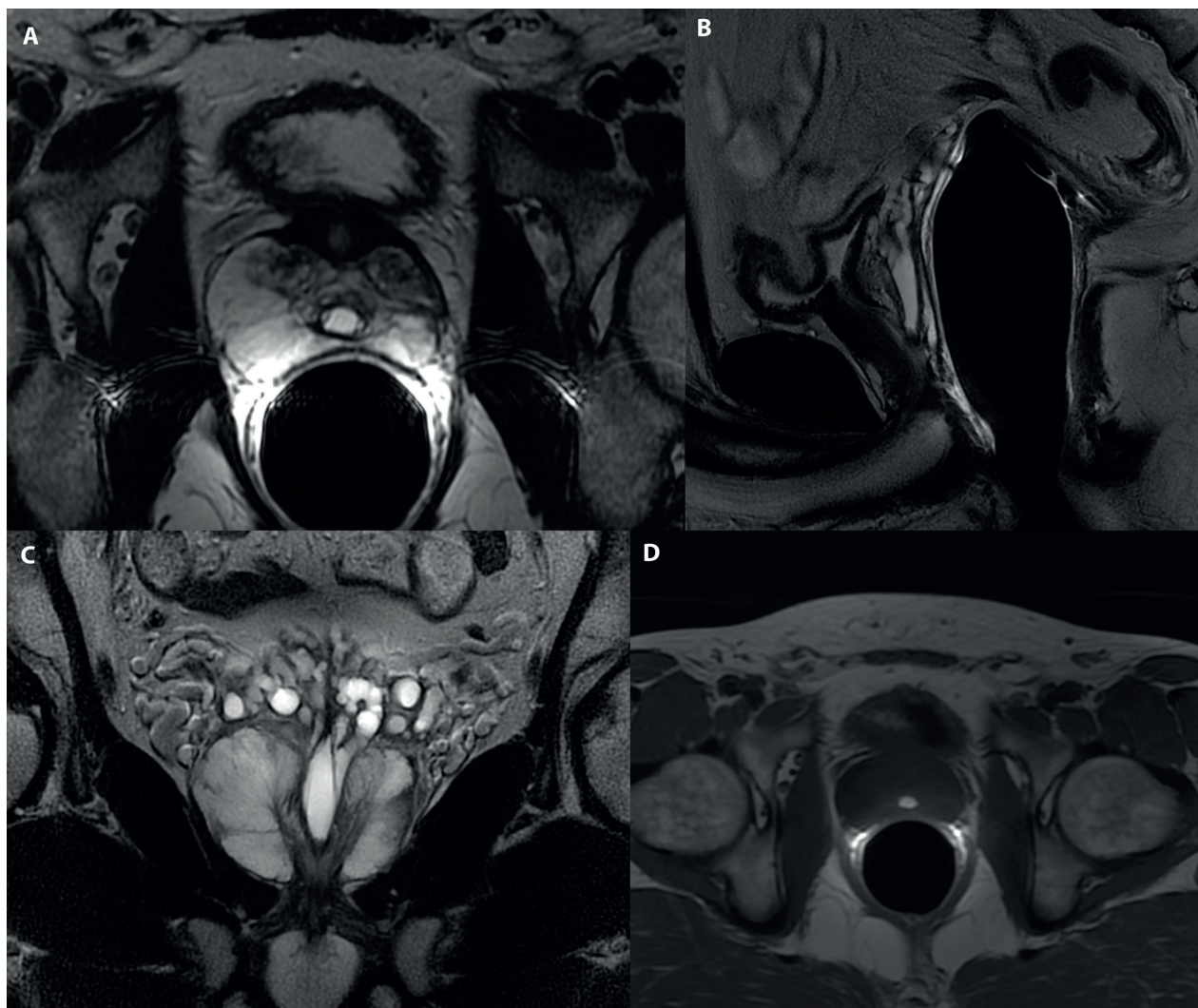


Figure 2. Prostatic utricle cyst in the same patient as in Figure 1. Axial (a), sagittal (b), and coronal (c) spin-echo T2-weighted MR images show a midline high-signal-intensity prostatic utricle cyst. Axial (d) spin-echo T1-weighted MR image shows high signal intensity of the cystic lesion due to recent episode of haematospermia.

this surgical method is the least invasiveness, preventing a potential infertility and impotence related to surgery, despite the higher risk of a possible recurrence of disease.

Discussion

In the literature, intraprostatic cysts are usually classified as either median, paramedian and lateral cysts (1), or intraprostatic and periprostatic cysts (2).

Median intraprostatic cysts, located in the midline back to the superior tract of the prostatic urethra, are in

turn classified in Mullerian duct cysts and prostatic utricle cysts, both resulting from an incomplete or failed regression of Mullerian duct system. Prostatic utricle cysts, unlike the Mullerian duct ones, are smaller pear-shaped cystic structures which not extend above the base of the prostate and remain confined to the prostatic boundary. They are more characteristically discovered as occasional findings in young adults under the age of 20, in about 1-5% of the general population (3) and can be associated with further anomalies of the genitourinary system, such as cryptorchidism, renal agenesis, and hypospadias.

They can also manifest with a heterogeneous group of clinical manifestations, such as urinary tract infections,

incontinence, recurrent episodes of epididymitis, and finally, although rarely, with haemospermia.

Causes of hematospermia include sexually transmitted diseases, trauma, prostatic inflammatory or infectious disease, malignant neoplasia, conditions affecting the testis or the seminal vesicles and finally cystic dilatations of the utricle as in the clinical case that we report (4).

Depending on symptoms and severity, the prostatic utricle cyst can be treated either with a simple transperineal or transrectal aspiration, either with endoscopic section of the utricle meatus and transurethral marsupialization or open surgery.

Recently robot-assisted laparoscopy was considered a valid, safe and effective minimally-invasive technique for the treatment of prostatic utricle (5).

In any case, treatment is recommended only for symptomatic lesions (6).

Conclusion

The cysts of the prostatic utricle are one of the possible causes of haemospermia in the young adult subject, a symptom that most of the time is painless, self-limiting and benign but its appearance may be frightening and alarming to the patient.

This is the fundamental reason why it is necessary to know their salient anatomy, their clinical and imaging features in order to allow an early radiological diagnosis and reassure the patient.

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Consent for publication: Written consent for publication was obtained from the patient.

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