

A Rare Case of Intraprostatic Median Cyst Presenting with Lower Urinary Tract Symptoms

Alt Üriner Sistem Semptomları ile Başvuran Nadir İntraprostatik Medyan Kist Olgusu

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ABSTRACT Intraprostatic cysts are usually asymptomatic and uncommon. In this kind of cysts, lower urinary tract symptoms are unexpected. Due to similar embryological structure and radiological imaging, the differential diagnosis of intraprostatic cysts is difficult. However, clinical aspects can be useful in differential diagnosis. Herein, we report a case of intraprostatic median cyst with lower urinary tract symptoms in fourth decade of his life. We also discuss the differential diagnosis of median intraprostatic cysts on the based on this case.

Key Words: Lower urinary tract symptoms; mullerian ducts; prostate

ÖZET İntraprostatik kistler genellikle asemptomatiktir ve nadir görülürler. Bu kist türünde alt üriner sistem semptomları ile başvuru beklenmemektedir. Embriyolojik özellik ve radyolojik görüntü benzerliklerinden dolayı intraprostatik kistlerin ayırıcı tanısı zordur. Ancak ayırıcı tanı için klinik özelliklerden yararlanılabilir. Burada, yaşamının dördüncü dekadında alt üriner sistem semptomları ile başvuran intraprostatik medyan kist olgusunu sunuyoruz. Ayrıca bu olgu zemininde medyan intraprostatik kistlerin ayırıcı tanısı da tartışılmıştır.

Anahtar Kelimeler: Alt üriner sistem semptomları; müllerian kanallar; prostat

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Cysts of the lower male genitourinary tract divided into two groups: intraprostatic and extraprostatic. Intraprostatic cysts classification may be evaluated in 3 titles: median cysts (prostatic utricle, mullerian duct), paramedian cysts (ejaculatory duct) and lateral cysts (prostatic retention cysts, cystic degeneration of benign prostate hyperplasia, prostatic abscess, cysts associated with tumors).¹ In spite of the development in radiological imaging and pathological assessment techniques, the differential diagnosis of median intraprostatic cysts is still not easy.² In general, symptoms occur in early ages of life.¹ Particularly presenting with lower urinary tract symptoms (LUTS) is very rare.³

CASE REPORT

A 34-year-old fertile man with no significant medical and surgical history was admitted to our clinic with obstructive LUTS present for 8 years. His symptoms worsened during the last 12 months and International Prostate

Symptom Score (IPSS) was 22 despite alpha-blocker treatment. Obstructive pattern was observed on uroflowmetry test. He had no history of hematuria, hematospermia and urinary incontinence. On physical examination abnormality was recorded. After physical examination, urinalysis and urine culture tests were performed with routine complete blood count, creatinine, blood urea nitrogen and prostate specific antigen (PSA) measurements. All values were within normal limits and PSA value was 1.2 ng/ mL. Digital rectal examination revealed a nontender soft mass in the midline at the level of the prostate.

In radiologic imaging methods, transrectal ultrasound (TRUS) revealed a 3.5 x 3.3 x 3.2 cm midline intraprostatic anechoic cyst. Pelvic 3T magnetic resonance imaging (MRI) revealed a 3.5 x 3.2 x 4 cm midline cyst extending above the prostate. This cystic lesion had no communication with the prostatic urethra and it was hyperintense on T2-weighted, hypointense on T1-weighted images (Figure 1).

Cystourethroscopy revealed no fistula at the level of verumontanum and prostate lobes were not hypertrophic. Considering MRI images, we made an incision in the midline, just above the verumontanum. Anterior wall of the cyst was opened first and then excised with concurrent

digital rectal examination (Figure 2). After excision, 18 F urethral foley was inserted into the bladder and it withdrawn on the 3rd postoperative day.

On histological examination, cystic dilatation of the prostate gland containing abundant corpus amylase was observed. A panel of immunohistochemical markers was performed with the available markers which are estrogen receptor (ER), progesterone receptor (PR), CA125, PSA, PAP and WT-1. The biopsy materials were positive for PSA, PAP and CA125. Other markers were negative. Identification of the cyst wall could not be made based on these findings.

After 12 months, IPSS (22 to 8) and post voiding residual volume were decreased. Average urine flow rate (7 to 13 mL/s) and max flow rate (10 to 18 mL/s) were improved.

DISCUSSION

Fallopian tubes, uterus and vagina develop from Mullerian duct, in female. In the male, the mullerian inhibiting factor secreted by the Sertoli cells causes regression of Mullerian structures at the eleventh weeks of gestation. However, a minor part of its cranial and caudal ends contribute to the appendix testis and the prostatic

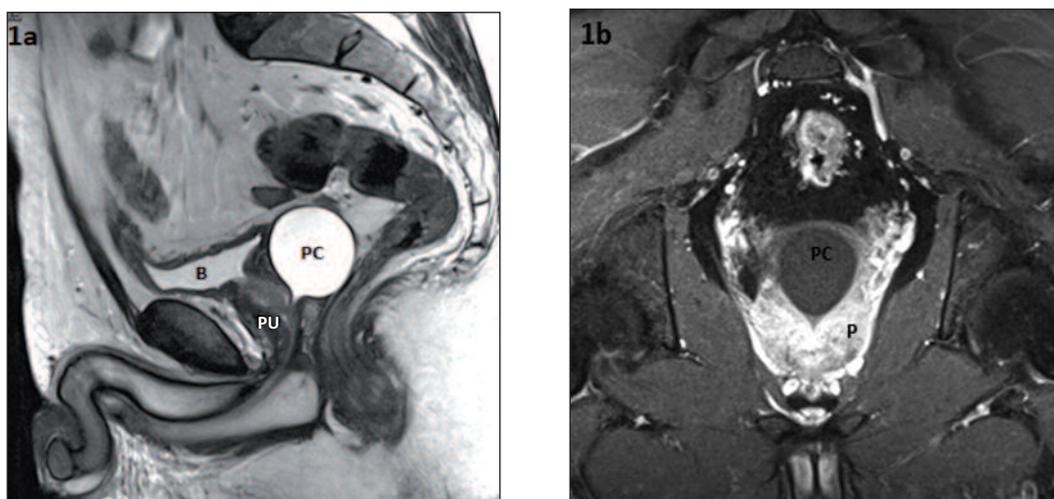


FIGURE 1: A 3.5 x 3.2 x 4cm intraprostatic cyst had no directly relationship with the prostatic urethra and it was hyperintense on sagittal T2-weighted (a) and hypointense on axial T1-weighted images (b) of pelvic MRI.

B: Bladder; P: Prostate; PC: Prostatic cyst; PU: Prostatic urethra.

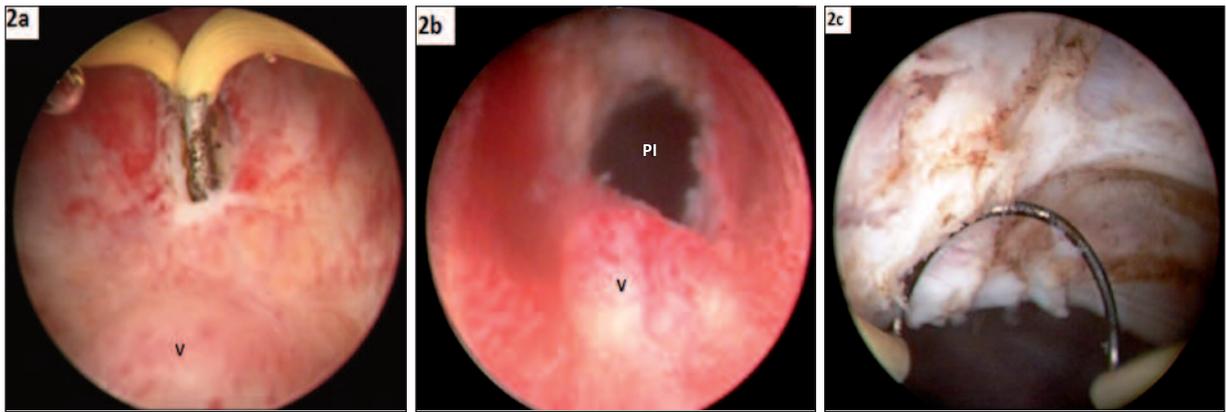


FIGURE 2: Cystourethroscopy. Transurethral incision was made at midline, just above the verumontanum according to MRI findings (a,b). After incision, we unroofed the anterior wall of cyst (c).

V: Verumontanum; PI: Place of incision.

utricle, respectively.⁴ Focal failure of regression and focal saccular dilatation of Mullerian duct will lead to the formation of a Mullerian duct cyst (MDC), which is a midline prostatic cystic structure that neither communicates with the posterior urethra nor contains any sperm.⁵

According to previous autopsy series, reported prevalence of MDCs in men is 1%. However, this prevalence rate may be underreported, because of a few articles have reported a prevalence of 5 % in urologic patients.⁶

Some authors believe that the MDC is connected to the urethra via a fused stalk and the prostatic utricle cyst (PUC) opens directly into the urethra on histopathological examination.⁷ However, it is not easy to demonstrate the difference between MDC and PUC. Kato et al. emphasized that it is necessary to show the connection between prostate cyst and prostatic urethra for optimal histopathological evaluation and differential diagnosis.⁷ Thus, they supported that the surgeon should excise the cyst and related prostatic urethra as en-block.⁷

Due to the development of modern radiological technology, diagnosis of the MDC is made by just imaging studies without confirming its histological structure or relation to the prostatic utricle. On transrectal ultrasound, MDC and utricle cysts both appear anechoic and both are located in the midline and information obtained by TRUS are not

convincing. Although pelvic MRI gives detailed triplanar depiction of lesion, MDCs and PUCs have the same image features (hyperintense images on T2-weighted and hypointense T1-weighted images).^{8,9} Therefore, radiological differentiation is usually not possible.

According to clinical features, one can obtain opinion about differential diagnosis. Although, a few cases have been reported that occur in infancy, MDCs usually were seen in the third and fourth decade of life, by contrast PUCs are detected earlier in life.² In another article, Shebel et al. emphasized that PUCs are more frequent under 20-year-old while MDCs are mostly seen after 20-year-old.¹ MDCs are rarely associated with renal agenesis and generally without external genital abnormality. But, PUCs can be associated with genitourinary abnormalities such as hypospadias, cryptorchidism and intersex disorders.^{1,2} MDCs are usually asymptomatic. It rarely may cause urinary retention in early adulthood and infertility due to obstructing the ejaculatory duct in the midline.² However, utricle cysts may cause symptoms, like pain, postvoiding incontinence, hematospermia, recurrent urinary tract infections and recurrent epididymitis in early ages of life.³ In addition, we can aspirate content of the cyst for differential diagnosis, at radiological investigation. At aspiration, MDCs never contain with spermatozoa. But, spermatozoa usually obtained at aspiration of PUCs.^{1,5}

The most commonly used treatment modalities includes surgical exploration and excision of the cyst openly (in cases of large cysts), TRUS guided aspiration of the cyst and endoscopic transurethral incision or resection of the cyst wall for management of midline intraprostatic cysts.^{3,9-11} Aspiration under TRUS guidance is a safe treatment modality, but recurrence of the cyst may occur in many cases.^{3,9} On the other hand, cyst excision with open surgery may be chosen in for larger cysts.¹⁰ Besides invasiveness and morbidity of open surgery and seminal vesicle injury, open cyst excision is not recommended and this procedure should be chosen in infertile patients.¹⁰ In our study, we choose endoscopic incision for treatment. Approximately in 80-90% of patients, endoscopic procedures are safe and effective for regression of the symptoms. However, retrograde ejaculation may occur after transurethral incision or resection of the cyst wall.¹¹

In conclusion, intraprostatic cyst presenting with LUTS is extremely rare however, if it is present with symptoms, differential diagnosis of intraprostatic cyst is difficult. In some cases, clinical aspects may be helpful for diagnosis that cannot be diagnosed pathologically and radiologically. According to clinical aspects, the present case was considered as a MDC. MDCs are usually asymptomatic and rarely cause LUTS. Especially in young males with LUTS which are refractory to the medical treatment, MDC should be considered. Patients may be assessed with radiological imaging methods. If intraprostatic cyst is detected, aspiration by imaging guidance and endoscopic or surgical excision treatment should be planned.

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