

An Anteriorly Positioned Midline Prostatic Cyst Resulting in Lower Urinary Tract Symptoms

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Most prostatic cysts are not symptomatic and are found incidentally. There have been some reports of prostatic cysts presenting as an infravesical obstruction. Our case is the second published report of an anteriorly positioned midline prostatic cyst of the bladder neck. The prostatic cyst in a 41-year-old man presenting with lower urinary tract symptoms was located in the anterior and midline area of the prostate and was protruding into the bladder neck at the precise twelve o'clock position. The cyst obstructed the bladder neck by acting like a checking valve. Transurethral resection of the cyst was performed, and the obstructive symptoms successfully improved.

Key Words: Bladder outlet obstruction; Cyst; Prostate; Transurethral resection

In recent years, the increasing use of transrectal ultrasound (TRUS) and computed tomography (CT) scans have resulted in the discovery of incidental prostatic cysts. Prostatic cysts are observed in 0.5% to 7.9% of patients and are classified into six distinct types [1]. Most prostatic cysts are asymptomatic and are located posteriorly. Symptomatic prostatic cysts may be confused with benign prostatic hyperplasia (BPH) or neuropathic bladder when they present with lower urinary tract symptoms (LUTS) [2]. Midline prostatic cysts are less common and are mostly located posteriorly. Treatment options for symptomatic midline prostatic cysts include transrectal aspiration, transurethral marsupialization, and open surgery [3]. Here we report on a single case of a midline prostatic cyst of the bladder neck in the precise twelve o'clock position. The prostatic cyst was located anteriorly and acted like a checking valve during urination. To date, there have been fewer than five published reports of

cases of symptomatic midline prostatic cysts located anteriorly [3-5]. Some cases of infravesical midline prostatic cysts have been reported [6,7]. To our knowledge, this is the second published report of an anteriorly positioned midline prostatic cyst of the bladder neck [7] and the first case report of a prostatic cyst in Korea.

Case

A 41-year-old man presented with LUTS, including dysuria, frequency, weak urine stream, and a sensation of residual urine that had appeared two weeks before. He had no previous medical problems and had been healthy. His International Prostate Symptom Score (IPSS) was 20, and his quality of life (QoL) score was 4. Uroflowmetry showed that the peak flow rate was 9 mL/s (136 mL voided volume) and the volume of residual urine was more than 200 mL. A digital rectal examination revealed a normal pros-

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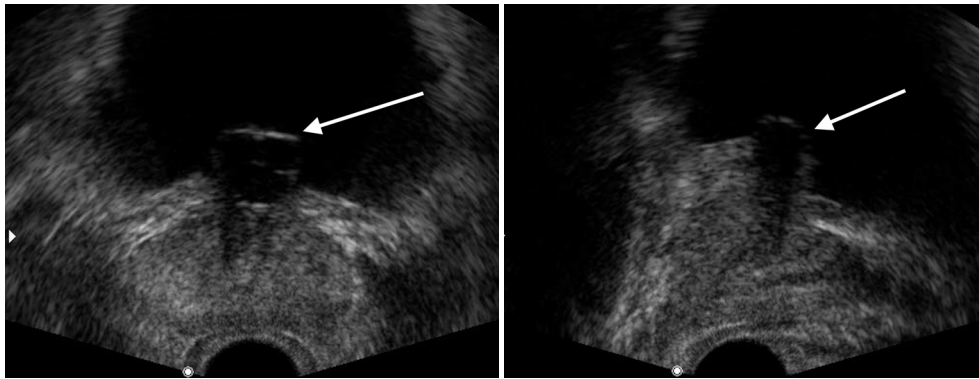


Figure 1. Transrectal ultrasound showing the midline prostatic cyst located anteriorly.

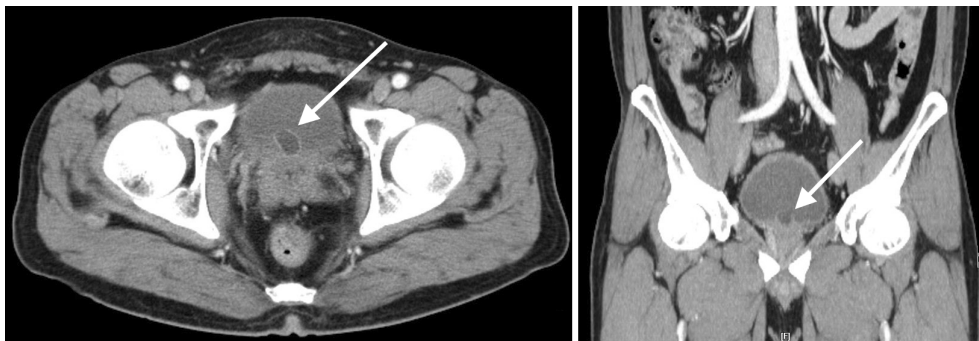


Figure 2. The midline prostatic cyst is positioned intravesically and anteriorly on the CT scan.

tate, and the results of routine laboratory examinations were normal except for microscopic hematuria. Urine cytology did not suggest malignancy, and his serum PSA level was 3.12 ng/mL.

TRUS revealed a midline prostatic cyst with an approximate diameter of 1.7 cm that projected into the bladder neck (Figure 1). The volume of the prostate was approximately 26.4 mL on TRUS. The cystic mass was located in the central zone of the prostate. CT scanning suggested the presence of a urethrocele or a cyst of prostate origin, such as a Müllerian duct cyst (Figure 2). Other solid organs were all within normal limits on the CT scan. Preoperative cystoscopy was performed to evaluate for a cystic mass. A cystic mass based on the anterior portion of the prostate was observed that closed off the bladder neck like a checking valve in the precise twelve o'clock position. The prostate did not exhibit hyperplasia or hypertrophy. Preoperatively, a pres-

sure flow study was performed to evaluate bladder function and the pattern of obstruction. A pressure flow test revealed the obstructive pattern and normal function of the detrusor (Figure 3). No abnormalities of the bladder were shown as a result of the cystoscopy and urodynamic study. A ten-core transrectal prostate biopsy was performed because the serum PSA level was higher than the age-adjusted reference range.

The patient underwent transurethral surgery under general anesthesia. The prostatic cyst was incised and marsupialized with the transurethral resector (Gyrus ACMI[®] bipolar device, Olympus Corp., Japan) (Figure 4). No bleeding or mass-like lesions were observed during the procedure. The pathology report indicated that the cyst was lined by mucinous epithelium and benign urothelium. There was also no evidence of malignancy in the TRUS biopsy specimen.

The urethral Foley catheter was removed on

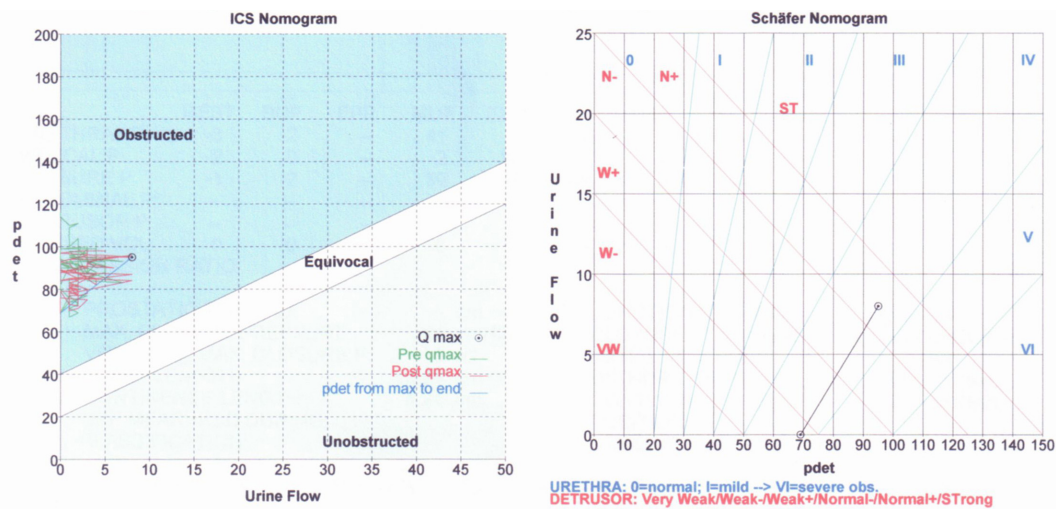


Figure 3. Preoperative pressure flow study showed the obstruction pattern and normal detrusor function.

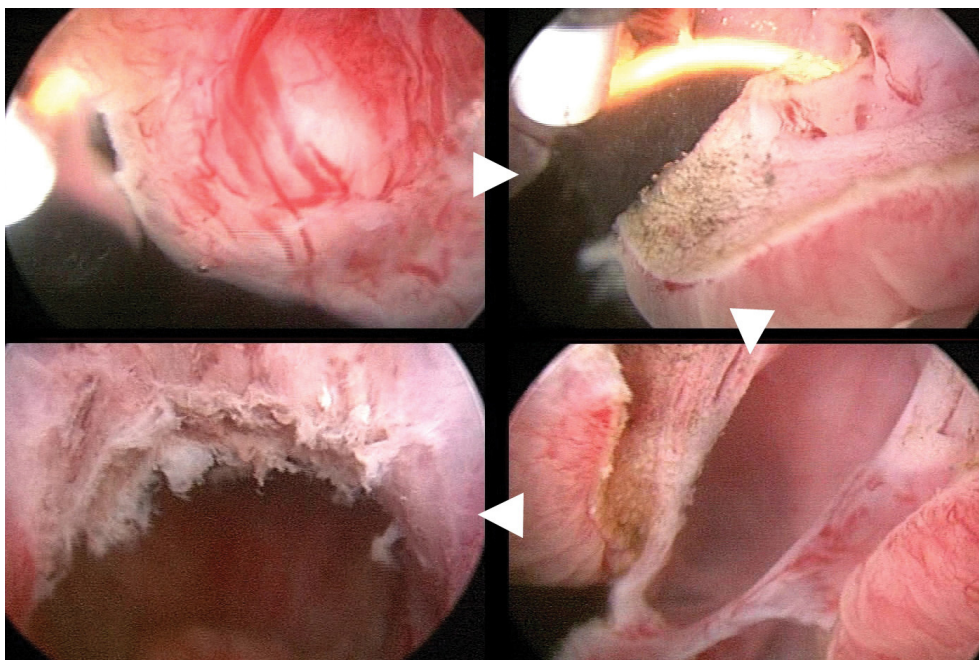


Figure 4. The First, second and third pictures in the direction of arrows show transurethral resection of the prostatic cyst with bipolar device (Gyrus ACMI®, Olympus Corp., Japan) and the fourth picture shows the bladder neck after resection.

the second postoperative day, and the patient was discharged on the third postoperative day. A month later, the patient visited the outpatient department without any LUTS. Postoperatively, uroflowmetry showed that the peak flow rate was

16 mL/s (320 mL voided volume) and the volume of residual urine was less than 30 mL. Moreover, the patient had no complaints of retrograde ejaculation or sexual dysfunction.

Discussion

The incidence of prostatic cysts is from 0.5% to 7.9%. Galosi et al. classified 6 distinct cyst types based on TRUS and pathological features, including midline cyst, cyst of the ED, cyst of the parenchyma, multiple cysts, complicated cyst, cystic tumor, and cyst secondary to other diseases. Three percent to 7.5% of asymptomatic patients have medial cysts, and 5% of patients have LUTS [1,2]. Tambo et al. analyzed 34 patients with symptomatic cysts [4]. Fourteen (40%) patients complained of obstructive urinary tract symptoms, 11 (33%) of urinary retention, 3 (9%) of urodynia, and 2 (6%) of infertility.

Galosi et al. reported that midline cysts are observed by TRUS in 9.8% of cases [1,4]. Most midline cysts, however, are located posteriorly [3]. We report an unusual case of a prostatic cyst located on the anterior portion of the prostate and in the precise twelve o'clock position on the bladder neck and presenting as LUTS despite a medium-sized prostate. So far, in published reports, the total number of cases of symptomatic midline prostatic cysts located anteriorly is fewer than five. Some cases of infravesical prostatic cysts have been reported [3,5,6,8]. Approximately 35 patients with symptomatic prostatic cysts have been reported [3,4]. However, only three cases of midline cysts of the bladder neck have been reported, including our case [4].

There are multiple treatment choices for a symptomatic prostatic cyst, including transrectal aspiration or sclerotherapy, marsupialization with a transurethral technique, and open surgery. Tambo et al. reported two cases of prostatic cysts arising around the bladder neck similar to our case [4]. They successfully performed a transurethral unroofing and resectioning of these prostatic cysts. Nayyar et al. reported a midline intraprostatic cyst in a young man [3]. They performed marsupialization of the cyst into the prostatic urethra with the Collins knife. Chang et al. reported a case of transurethral resection of a prostatic cyst that was causing LUTS [6]. In their case, the cystic mass had a single stalk that originated from the left lateral lobe of the prostate

and was resected by transurethral surgery. They reported successful resolution of voiding symptoms and no erectile dysfunction after the operation. Owing to the various techniques for transurethral surgery that have been developed, transurethral resection of a cystic mass may be performed successfully. In our case, there were no complications during transurethral resection with the bipolar device. If the symptomatic cystic mass is small, simple unroofing or aspiration might be considered. However, complete resection of the cyst should be performed to treat LUTS from a prostatic cyst, because most of the symptoms may be a physical phenomenon, such as functioning as a checking valve, obstructing urinary flow, or irritating the prostate or bladder. The most important complication of transurethral resection includes injury of the urethra or bladder, which is located near the thin base of the cystic mass.

In our case, the serum PSA level was higher than the age-adjusted reference range and we performed TRUS-guided prostate biopsy to evaluate and detect prostate cancer. However, the result of the biopsy revealed normal prostate tissues. In most studies, cystic lesions did not influence serum PSA, but the relationship between PSA and the extent or type of cysts has not yet been studied [1].

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