Unroofed Midline Prostate Cyst Misled Into a Stricture With Obliterative Bladder Neck Contracture Following a Laser Prostatectomy

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We report on a case of a 67-year-old man who presented with persistent lower urinary tract symptoms following a potassium titanyl phosphate laser photoselective vaporization of prostate. Upon further diagnostic examinations were performed, he was noted to have an obliterative bladder neck contracture with an incidental, misleading, and rare presence of an unroofed midline anterior prostatic cyst presenting as a stricture. As we were presented with this case, it was imperative to address these complications of bladder neck contracture and incompletely ablated prostatic cyst. This report brings to light underestimated complicating factors in the urinary tract, and the diagnostic and therapeutic interventions we had undertaken to rectify the identified complications and improve patient’s quality of life. The patient underwent internal urethrotomy, resection of prostatic cyst wall and transurethral resection of the prostate directed to improve his quality of life and prevent urinary retention.

Keywords: Urinary bladder neck obstruction; Urethra; Prostate; Cysts

A 67-year-old man visited Severance Hospital due to persistent and aggravated lower urinary tract symptoms (LUTS) following a KTP laser PVP 3-month ago in another hospital. The International Prostate Symptom Score (IPSS) was 21, the QoL score was 5. Uroflowmetry showed that the peak flow rate was 1.8 mL/sec. Transrectal ultrasonography revealed prostate volume was approximately 35 mL (Fig. 1A). A bladder neck contracture was considered, and transurethral incisions of the bladder neck and possible completion transurethral resection of the prostate (TURP) were planned.

Under the spinal anesthesia, patient was placed in the lithot-
omy position. Using a 24 Fr resectoscope (Karl Storz, Tuttingen, Germany), cystoscopy revealed an elevated bladder neck with narrow opening. Transurethral resection at the narrow vesical neck was performed. On panendoscopy, vascular pattern with areas of prominent vessels of the bladder mucosa appeared unremarkable. However, other anatomic landmarks such as the trigone and ureteral orifices could not be identified despite giving intravenous indigo-carmine, and the bladder capacity was noted to be extremely small. So we suspected that this space, which was regarded as the bladder, might not be a true vesical space. A palpable suprapubic mass was noted on Crede maneuver, which was identified as a distended bladder on an intraop-

erative ultrasonography. A suprapubic cystostomy was performed to adequately drain the bladder and thus address the obstruction temporarily. Retrograde urethrography revealed severe bladder neck obstruction and a large midline cyst (Fig. 2). In retrospect, what we visualized by initial cystoscopy and assumed as the bladder neck, were actually the borders of an unroofed cyst from the previous PVP. Furthermore, the cyst wall seeming to appear like a bladder mucosa was what we assumed to be as the urinary bladder (Fig. 3). Under these thorough anatomical understanding, the severely obliterated bladder contracture (“true bladder opening”) was identified through a repeat endoscopic evaluation. A straight urethrotome was advanced to create a channel at bladder neck, and more radical incisions made from the minute opening at the site of the contracture to create a larger opening. The area of the contracture was further resected to achieve visualization of the bladder and its entirety. This time the bladder trigone and ureteral orifices were identified, and no other abnormalities were seen. Resection of the prostatic cyst wall was done extending to the fibromuscular area of the prostate gland. A three-way Foley catheter was inserted after evacuation of the resected tissues. The patient was discharged with both Foley catheter and suprapubic catheter maintained. A week after the procedure, the patient’s Foley catheter was removed and he was noted to have resolution of

Fig. 1. (A) Transrectal ultrasonography showed that prostate may be resected by previous photoselective vaporization of prostate. (B) Schematic illustration on the relationship between obliterated bladder neck and midline prostatic cyst.

Fig. 2. (A) The true bladder neck contracture; (B) Urethrography revealed the anatomy of the anterior urethra and an outline of midline prostatic cyst of considerable size. (C) Cystography that shows a distended bladder.

Fig. 3. (A) A misleading appearance of the borders of an unroofed cyst wall assumed to be an elevated and contracted bladder neck. (B) The resected borders of the misleading cyst; (C, D) the mucosal vascular pattern of the cyst wall appearing like a bladder mucosa.
voiding symptoms. Removal of the clamped suprapubic catheter was done later when voiding problems were noted to be resolved since it can be used to drain the bladder should the patient have difficulty in voiding. A noninvasive procedure, uroflowmetry was repeated on follow up and showed a flow rate of 21.5 mL/sec and a residual volume of 8 mL (Fig. 4). IPSS was 7 and QoL was 2, 3 months after operation.

DISCUSSION

So far, in published reports, the total number of cases of symptomatic midline prostatic cysts located anteriorly is fewer than five [3]. Prostatic cysts are observed in 0.5% to 7.9% of patients and are classified into six distinct types including: 1) isolated medial cysts, 2) cysts of the ejaculatory duct, 3) simple or multiple cysts of the parenchyma, 4) complicated cysts (infectious or hemorrhagic), 5) cystic tumors, and 6) cysts secondary to parasitic disease [4]. The cyst may appear to obstruct the bladder outlet by a ball-valve mechanism as previously reported [5,6]. Some cystic lesions in the male pelvis may be discovered by chance with sonography that is now more widely used; in other cases, however, they may remain overlooked [7]. Associated symptoms include irritation and/or obstructing voiding symptoms, decreased volume of ejaculate, painful ejaculation, hematospermia, and infertility [5]. In a sonographic-pathologic correlation done by Hamper et al. [8], cystic lesions were not associated with carcinoma of the prostate, but represented either a growth phenomenon related the presence of benign prostatic hypertrophy, inflammatory conditions (abscesses), or anatomic variants (utricle). Incompletely excised cysts during open surgery are reported to recur, whereas durable, recurrence-free results have been reported for medial prostatic cysts treated with transurethral approach [9].

From these literature gathered, prostatic cyst is a relatively rare entity, it can be congenital or acquired, an incidental finding on diagnostic examinations such as ultrasonography, can be overlooked, and can lead to misdiagnosis when it becomes symptomatic. In review of the events, this patient presented with LUTS that prompted him to seek medical advice. A prostatic cyst as an isolated cause of bladder outlet obstruction may have been treated with a transurethral resection of the prostatic cyst and TURP and might prevented a bladder neck contracture. As we were presented with this rare case, it was imperative to address these complications of bladder neck contracture and incompletely ablated prostatic cyst. It was amazing for us do discover that an unroofed prostatic cyst can appear like bladder neck contracture, and its wall appear like a bladder mucosa on cystoscopy (Fig. 1B). Although the ball-valve mechanism of prostatic cysts has been reported in the past, no report on a cyst wall appearing like a bladder mucosa on cystoscopy has been reported. The urethrogram performed also revealed the outline of a prostatic cyst with considerable size.

Fig. 4. (A) The preoperative uroflowmetry pattern suggested obstructive flow (maximal flow rate [Qmax], 1.3 mL/sec). (B) In postoperative uroflowmetry, patient’s symptom was improved (Qmax = 21.5mL/sec).
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