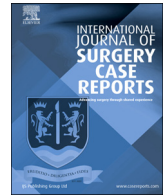




Contents lists available at ScienceDirect

## International Journal of Surgery Case Reports

journal homepage: [www.casereports.com](http://www.casereports.com)

# Percutaneous resection of anteriorly located midline prostatic cyst: A case report and description of technique

Raed Mohammed Almannie

Urology Division, Department of Surgery, College of Medicine, King Saud University, P.O.Box 7805, 11472, Riyadh, Saudi Arabia

## ARTICLE INFO

## Article history:

Received 15 February 2021  
 Received in revised form 8 April 2021  
 Accepted 12 April 2021  
 Available online 14 April 2021

## Keywords:

Anterior prostatic cyst  
 Prostate  
 Cyst  
 Obstruction  
 Lower urinary tract symptoms  
 Case report

## ABSTRACT

**INTRODUCTION:** Midline prostatic cysts are common and are usually discovered incidentally. However, anterior midline prostatic cysts are considered rare.

**PRESENTATION OF CASE:** We report a 36-year-old man who presented with severe lower urinary tract symptoms. The patient was diagnosed with an anterior midline prostatic cyst bulging into the bladder. The location of the cyst did not allow for a safe transurethral resection. He was managed successfully through a percutaneous approach.

**CONCLUSION:** Percutaneous resection of an anteriorly located prostatic cyst is simple and safe. This procedure is advised if bladder neck injury is possible during transurethral resection to avoid retrograde ejaculation.

© 2021 The Author. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

Midline prostatic cysts (MPCs) are common and are usually discovered incidentally. The incidence of an MPC on autopsy is 1% [1]. With the recent advances and expanded use of imaging, the rate has increased to 8.6% [2]. In infertile men undergoing transrectal ultrasound, the incidence reaches 17% [3]. However, symptomatic cysts are less frequent and are usually treated with transurethral resection of the cyst [4]. However, anteriorly located MPCs are considered rare, with only a few case reports in the literature [5].

We report a patient diagnosed with a symptomatic anterior MPC bulging into the bladder. In addition, we describe a safe surgical treatment method for such cases. The case is reported according to SCARE criteria [6].

## 2. Case report

A 36-year-old man presented with a history of dysuria, weak urine stream, urgency and frequency for three years. The patient was diagnosed with prostatitis and received multiple courses of antibiotics with no relief. His medical and surgical history were unremarkable. His International Prostate Symptom Score (IPSS) was 22, and his quality of life score due to his urinary symptoms was five. A physical examination was normal.

Biochemical laboratory examinations were within normal ranges (including PSA). Urine analysis and culture were normal.

Uroflowmetry revealed a flat curve with a maximum flow rate of 6 mL/s. Pelvic ultrasound revealed a cyst, measuring  $1.4 \times 1.2$  cm, that was associated with the proximal part of the prostate gland (Fig. 1). MRI was suggestive of an anteriorly located prostatic cyst (Fig. 2).

The patient was scheduled for transurethral resection of the cyst. However, the decision was changed intraoperatively due to the location of the cyst and the possibility of retrograde ejaculation if transurethral resection was attempted (Fig. 3). Instead, the cyst was incised with a Holmium laser while the cystoscope was in the retroflexion position [5]. The patient improved and was satisfied with his voiding. Unfortunately, eight months later, he presented with the same preoperative urinary symptoms. Pelvic ultrasound revealed a recurrence of the cyst, which measured  $1.5 \times 1.4$  cm (Fig. 4). We decided to resect the cyst through a percutaneous approach to avoid any risk of retrograde ejaculation.

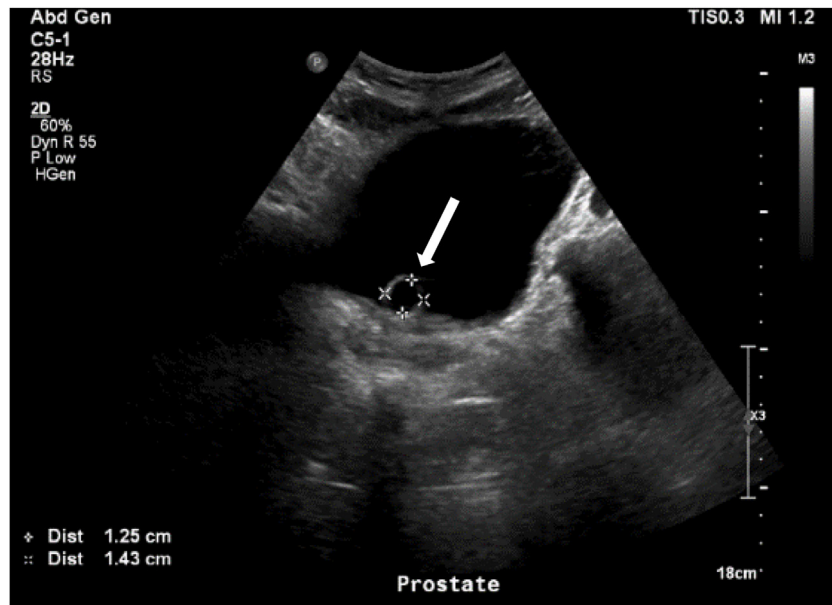
The patient was placed in the supine position. A urethral catheter was inserted, and the bladder was filled with saline. Then, the catheter was removed. Ultrasound-guided access was obtained using an 18-gauge access needle. After the insertion of a guidewire through the needle, balloon dilation of the tract was performed, and a 30 Fr sheath was introduced. A 26 Fr resectoscope was used to unroof the cyst (Fig. 5). The skin was closed with subcuticular sutures. The urethral catheter was reinserted for postoperative urinary drainage. The patient was discharged on the same day, and the urethral catheter was removed after three days.

The patient improved and was satisfied with his voiding. His IPSS score improved to five, and his quality of life score due to his urinary

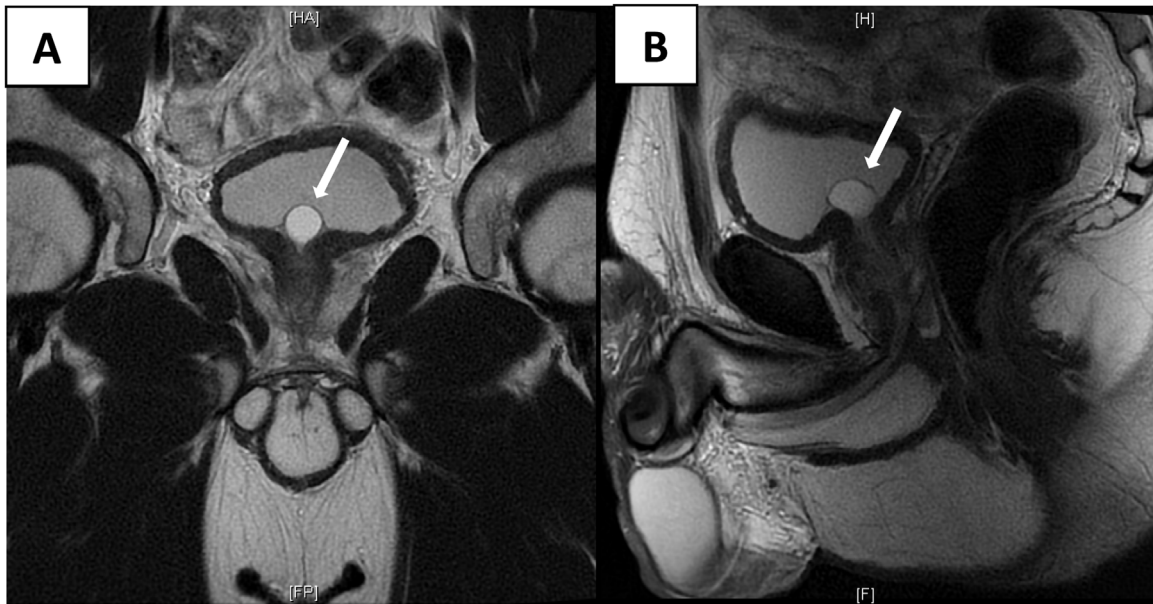
E-mail address: [Ralmannie@ked.edu.sa](mailto:Ralmannie@ked.edu.sa)

<https://doi.org/10.1016/j.ijscr.2021.105894>

2210-2612/© 2021 The Author. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).



**Fig. 1.** US pelvic male revealed a cyst measuring approximately 1.4\*1.2 cm which is related to the proximal part of the prostate gland and in close relation to the proximal urethra. It could represent an exophytic prostate cyst or less likely ureterocele with ectopic ureter insertion (arrow).



**Fig. 2.** Coronal (A) and sagittal (B) pelvic male MRI images showing a well-defined midline cystic arising from the prostatic base projecting into the urinary bladder with no clear communication with the urethra. It measures 1.5\*1.3 cm and shows bright T2 signal intensity and hypo intense T1 signal intensity with peripheral wall enhancement suggestive of a cyst (arrow).

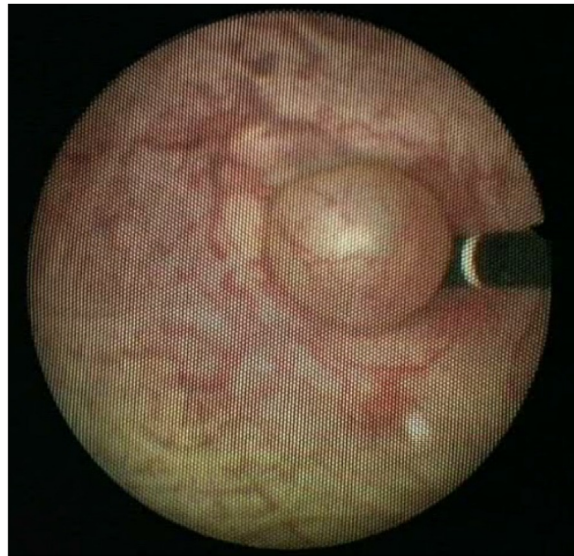


Fig. 3. flexible cystoscopy showing the cyst in the upper part of the bladder neck in the midline.

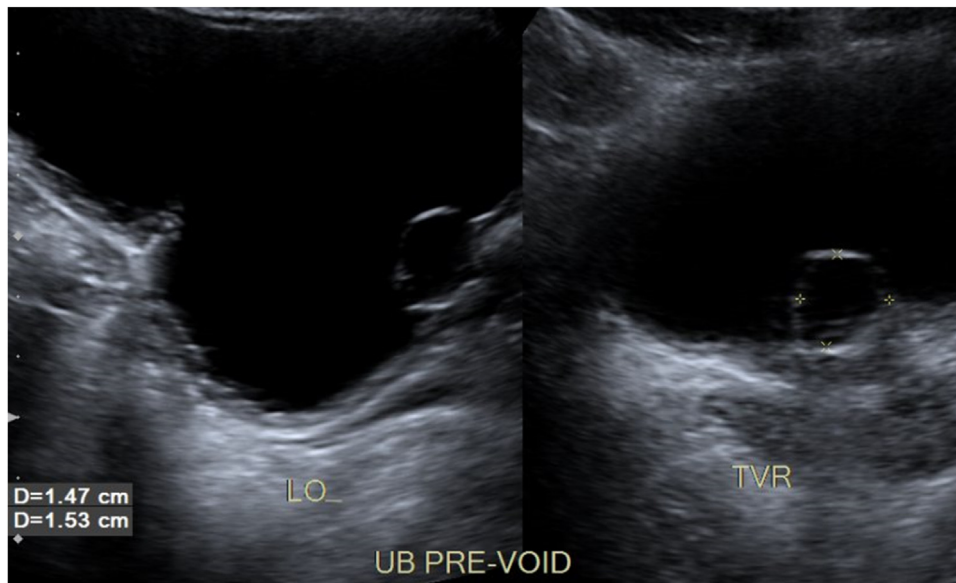


Fig. 4. US pelvic male revealed a recurrence of the cyst measuring approximately 1.5\*1.4 cm (arrow).

symptoms improved to one. His follow-up extended for two years post-resection, and no change in his voiding was reported.

### 3. Discussion

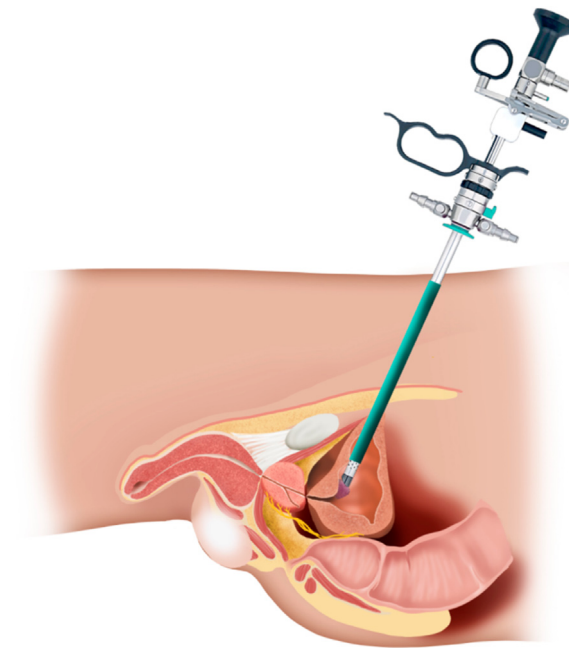
Different treatment options have been described for symptomatic cysts, including transrectal aspiration, sclerotherapy, marsupialization and, less frequently, open surgery [7,8].

Percutaneous approaches to treat different pathologies in the urinary tract have been described before. This approach has been used to treat large bladder stones and benign prostatic hypertrophy [9,10]. To our knowledge, this is the first description of its use to treat an anterior MPC. Anteriorly located midline cysts are rare and are usually treated by transurethral resection due to easy accessibility with good results [5].

The decision to proceed with this surgery was based on the location of the cyst (Fig. 3). Resection without the involvement of the bladder neck was impossible, as the position of the cyst was at 12 o'clock and it could not be visualized by a 30-degree rigid cystoscope. Thus, retrograde ejaculation could be a consequence of transurethral resection. However, percutaneous resection with such protruding cysts will avoid such complications (Fig. 5). The procedure was well tolerated by the patient, with an excellent 2-year outcome.

### 4. Conclusion

Percutaneous resection of anteriorly located prostatic cysts is simple and safe.



**Fig. 5.** Illustration of the surgical approach of the percutaneous resection of the prostatic cyst.

#### Declaration of Competing Interest

None.

#### Sources of funding

None.

#### Ethical approval

IRB approval was obtained.

#### Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

#### Author contribution

Raed Almannie the sole author.

#### Registration of research studies

Not Applicable.

#### Guarantor

None.

#### Provenance and peer review

Not commissioned, externally peer-reviewed.

#### Acknowledgement

Declared none.

#### References

- [1] R.M.-Arch. Pathol, Undefined 1937, Pathology of the Prostatic Utricle, Ci.Nii.Ac.Jp. (n.d.). <https://ci.nii.ac.jp/naid/10016450492/> (accessed June 18, 2020).
- [2] A. Juárez Soto, N. Ribè Subirà, P. Manasia, E. Ruiz Castañe, J. Castiñeras Fernandez, J. Pomerol Monseny, Classification of cystic structures located at the midline of the prostate: our experience, *Archivio Italiano Di Urologia, Andrologia : Organo Ufficiale [Di] Societa Italiana Di Ecografia Urologica e Nefrologica*. 76 (2004) 75–79.
- [3] E.D. Kim, E. Onel, S.C. Honig, L.I. Lipshultz, The prevalence of cystic abnormalities of the prostate involving the ejaculatory ducts as detected by transrectal ultrasound, *Int. Urol. Nephrol.* 29 (1997) 647–652, <http://dx.doi.org/10.1007/BF02552181>.
- [4] P. Dik, T.M.W.T. Lock, B.P. Schrier, B.Y.W. Zeijlemaker, T.A. Boon, Transurethral marsupialization of a medial prostatic cyst in patients with prostatitis-like symptoms, *J. Urol.* 155 (1996) 1301–1304, [http://dx.doi.org/10.1016/S0022-5347\(01\)66251-7](http://dx.doi.org/10.1016/S0022-5347(01)66251-7).
- [5] K.A. AL-Nasser, R.M. Almannie, New technique for the management of anteriorly located midline prostatic cysts causing severe lower urinary tract symptoms: case report and literature review, *Int. J. Surg. Case Rep.* 55 (2019) 107–111, <http://dx.doi.org/10.1016/j.ijscr.2019.01.019>.
- [6] R.A. Agha, T. Franchi, C. Sohrabi, G. Mathew, for the SCARE Group, The SCARE 2020 guideline: updating consensus surgical CASE REport (SCARE) guidelines, *Int. J. Surg.* 84 (2020) 226–230.
- [7] S. Saito, Transrectal ultrasound-guided puncture, drainage, and minocycline hydrochloride sclerotherapy for the symptomatic prostatic cyst, *J. Endourol.* 16 (2002) 693–695, <http://dx.doi.org/10.1089/089277902761403087>.
- [8] M. Tambo, T. Okegawa, K. Nutahara, E. Higashihara, Prostatic cyst arising around the bladder neck-cause of bladder outlet obstruction: two case reports, *Hinyokika Kyo. Acta Urologica Japonica*. 53 (2007) 401–404.
- [9] S. Sakhaei, M. Fallah-Karkan, M. Razzaghi, B.K. Azad, F. Aliakbari, Retrograde-assisted percutaneous cystolitholapaxy versus transurethral cystolithotripsy with holmium-YAG laser: a retrospective study, *J. Lasers Med. Sci.* 10 (2019) S54–S58, <http://dx.doi.org/10.15171/jlms.2019.S10>.
- [10] H. Türk, S. ün, E. Arslan, A new surgical technique: transvesical resection of prostate - case series, *Int. Braz. J. Urol.* 44 (2018) 1023–1031, <http://dx.doi.org/10.1590/S1677-5538.IBJU.2018.0113>.

#### Open Access

This article is published Open Access at [sciencedirect.com](https://www.sciencedirect.com). It is distributed under the [IJSCR Supplemental terms and conditions](#), which permits unrestricted non commercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.