Functional medicine

Bladder outlet obstruction secondary to Brunn’s cyst: A rare presentation in young man

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ABSTRACT

Bladder outlet obstruction in younger men is usually secondary to urethral stricture disease. In the elderly, it is often a due to benign prostatic hyperplasia (BPH). Bladder obstruction secondary to Brunn’s Cyst should be considered as a differential diagnosis in young men with acute onset of obstructive symptoms and a cystic lesion at the bladder neck. We report a case of bladder outlet obstruction secondary to Brunn’s cyst in a 21-year-old male. Radiological investigations, cystoscopy, and histological examination revealed the rare pathology, which was managed by endoscopic de-roofing of the cyst. The symptoms resolved dramatically, with no recurrence.

Introduction

Brunn’s cyst, first described by Israel Franco in 1988, is thought to be due to a pinched off portion of urothelial epithelium and is one of rare causes of bladder outlet obstruction. The aim of this study was to report a 21-year-old male who presented with bladder outlet obstruction secondary to a Brunn’s cyst and to highlight the clinical presentation, diagnosis, and treatment. To our knowledge, only six cases have been reported in the English literature.

Case presentation

A 21-year-old male patient presented to the Urology clinic at Al Hada Armed Forces Hospital with a new onset of obstructive lower urinary tract symptoms (LUTS). The patient complained of obstructive symptoms, including hesitancy, intermittency, weak stream, straining, and a sense of incomplete voiding for the previous three months. He had an International Prostate Symptom Score (IPSS) of 17 and a bother score of 4. He denied urinary incontinence, gross hematuria, or urinary tract infections. The patient was free of any other medical conditions, a nonsmoker, and not on any medication.

A physical examination was unremarkable. Renal function, urinalysis, and urine culture were normal.

Uroflowmetry confirmed a low maximum flow rate (Qmax) of 8 mL/s. A high post-void residual (PVR) of around 240 mL was noted. Upon further investigation, ultrasonography of the abdomen and pelvis revealed a small, well-defined cystic lesion at the bladder neck. Magnetic resonance imaging (MRI) revealed that the cystic lesion was separated from the ureteral orifice (Fig. 1). A radiological diagnosis of Brunn’s cyst was confirmed based on the ultrasonography and MRI results.

A cystoscopy examination showed that dome shaped cystic structure at the bladder neck between 3 and 6 o’clock was acting as a ball valve mechanism (Fig. 2).

The patient underwent transurethral de roofing and resection of the cyst. The resection revealed no evidence of solid components (Fig. 3). At the one-month follow-up after the resection, his obstructive urinary tract symptoms were resolved; Uroflow showed Qmax of 17 mL/s and his PVR was 0 mL.

His final histopathology report showed no evidence of malignancy and was consistent with a Brunn’s cyst.

Discussion

Brunn’s cyst was first described in 1988 by Israel Franco, who considered it to represent a pinched off portion of urothelial epithelium...
and hypothesized that it originated congenitally. Subsequently, D.P. Wiener found that Brunn’s nests were present in 89% of grossly normal bladders specimens, mostly in the bladder neck and trigon.

Bladder outlet obstruction is usually caused by enlargement of the prostate in the elderly or by urethral strictures in younger men. Our patient had a rare cause of benign urinary obstruction caused by a Brunn’s cyst of the bladder neck.

One of the most important differential diagnoses of a cystic lesion near the bladder neck is prostatic cysts, which arise intraparenchymally. By contrast, the Brunn’s cyst is located at the bladder neck, above the prostatic parenchyma, and is characterized by lower urinary tract symptoms. Further differential diagnoses are cystitis cystica or cystitis glandularis, which are caused by inflammatory processes. Ureteroceles secondary to ectopic ureteric insertions can also appear as cystic structures around the bladder neck.

The mainstay for diagnosis of Brunn’s cyst is ultrasonography and endoscopic evaluation. Transurethral de-roofing and resection is the first line of treatment. This procedure has been universally described for Brunn’s cyst and results in resolution of the symptoms, with no reported recurrence. Long term follow-up is not required, as Brunn’s cyst has benign clinical course, with no evidence of malignancy or recurrence.

To our knowledge, only six cases have been reported in the literature with the average age of 32 years. All of them presented with obstructive lower urinary tract symptoms and were managed by transurethral de-roofing, with resolution of symptoms and no recurrence.

Conclusion

Brunn’s cyst is rare cause of bladder outlet obstruction, but it should be considered in differential diagnosis in young adults with acute onset of obstructive symptoms. The first-line treatment is transurethral de-roofing and resection. No routine surveillance is required in the absence of symptoms because Brunn’s cyst has benign clinical course with no reported recurrence.

Consent form

Written consent was obtained from the patient for publication of this case report and the accompanying images.
References

1. Franco Israel, Eshghi Majid, Schutte Heinrich, Srinivasan Krishna, Joseph C, Addonizio. Bladder neck obstruction secondary to Brunn’s cyst. J Urol. 1988;139(1): 126–127.

2. Grimsby Gwen M, Tyson Mark D, Bernard Salevitz, Smith Maxwell L, Castle Erik P. Bladder outlet obstruction secondary to a Brunn’s cyst. Current urology. 2012;6(1): 50–52.

3. Sailo, Stephen Lalfakzuala, Sailo Laltanpuii. Brunn’s cyst: a Rare cause of bladder outlet obstruction in a young man. Urol J. 2015;12(5):2381.

4. Ren Runhan, Ryan McLarty, Vu Bach Phil. Images–A rare case of Brunn’s cyst causing obstructive lower urinary tract symptoms in a young male. Canadian Urological Association Journal. 2020;14(5):E227.

5. Wiener Daniel P, Koss Leopold G, Sablay Bella, Freed Selwyn Z. The prevalence and significance of Brunn’s nests, cystitis cystica and squamous metaplasia in normal bladders. J Urol. 1979;122(3):317–321.