

Recurrent Benign Prostatic Hyperplasia Mimicking Bladder Tumor Treated with Suprapubic Simple Prostatectomy

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Citation: Hoshi S, Bilim V, Hoshi K, Otake K, Chiba D (2020) Recurrent Benign Prostatic Hyperplasia Mimicking Bladder Tumor Treated with Suprapubic Simple Prostatectomy. Annal Cas Rep Rev: ACRR-178.

Received Date: 06 November 2020; **Accepted Date:** 12 November 2020; **Published Date:** 20 November 2020

Abstract

Introduction: Benign prostatic hyperplasia (BPH) is a common condition in aging males. It can be either asymptomatic or present with various symptoms of bladder outlet obstruction (BOO).

Case Presentation: We report on two patients, one 74-year old and another 83-year old, both of whom had previous history of surgical treatment for BPH. Large bladder mass was detected on abdominal ultrasound and bladder tumor was suspected at presentation. Further diagnostic imaging with CT and MRI revealed big recurrent BPH protruding into bladder. Both patients were successfully treated with open suprapubic prostatectomy.

Conclusion: Although routine diagnosis of BPH does not usually pose a clinical challenge, some patients need thorough workout to differentiate between BPH and bladder cancer.

Keywords: benign prostatic hyperplasia, transurethral resection of the prostate, bladder tumor, open suprapubic prostatectomy.

Keynote Message

Sometimes diagnosis of benign prostatic hyperplasia could be difficult to make, due to unusual clinical, endoscopic, and radiological presentations.

Abbreviations:

BPH: benign prostatic hyperplasia

LUTS: lower urinary tract symptoms

BOO: bladder outlet obstruction

UTI: urinary tract infection

BT: bladder tumor

UC: urothelial cancer

MRI: magnetic resonance imaging

CT: computerized tomography

TURP: transurethral resection of the prostate

HoLEP: holmium laser enucleation of the prostate

GU: genitourinary

Introduction

Benign prostatic hyperplasia (BPH) is a common condition in aging males. Normal prostate weighs about 20 g. Prostate size increases with age and average BPH weights 30 to 70 grams. BPH can be either asymptomatic or present with

various clinical symptoms [1]. Characteristic symptoms are lower urinary tract symptoms (LUTS), which are usually caused by chronic bladder outlet obstruction (BOO). Routine diagnosis of BPH does not pose a clinical problem. In uncomplicated cases diagnostic imaging is limited to abdominal ultrasound with estimation of post-void residual volume [2]. Transrectal ultrasound can also be performed to precisely estimate prostate volume and internal structure. When prostate cancer is suspected prostate MRI can be done. Cystoscopy is performed only when other causes of BOO (like urethral stricture) are suspected.

In a retrospective cohort study, it has been shown that BPH overall is not associated with bladder cancer risk. However, among men treated with TURP, particularly those with other comorbid GU tract conditions, risk of bladder cancer was elevated [3]. Another study using meta-analyses demonstrated that BPH was associated with an increased incidence of prostate cancer and bladder cancer [4]. Increased residual urine and prolonged exposure of urothelium to the urine carcinogens might be the major cause of higher risk of bladder cancer in BPH patients.

Recurrence rate after TURP is estimated to be about 5% [5]. Preoperative large prostate volume and large post-voiding residual are risk factors for BPH recurrence.

Here we report on two cases of recurrent BPH in whom BPH nodules protruded into bladder lumen and grossly resembled bladder cancer.

Case Presentation

The first patient was a 74-year old man. He had a past history of 2 transurethral resections of the prostate (TURP) at another institution 19 and 10 years previously. Prostate biopsy was performed 2 years earlier for elevated PSA and no malignancy was detected. He presented with dysuria at our institution. At the time of presentation PSA was mildly elevated to 7.3ng/ml. Based on the clinical symptoms and pyuria urinary tract infection (UTI) was diagnosed and the patient was prescribed levofloxacin and silodosin. Pyuria subsided and PSA steeply decreased to 1.2ng/ml. On

abdominal ultrasound bladder mass was present and bladder tumor was not ruled out. Bladder tumor was also suspected by CT scan (Figure 1A). As the patient refused to undergo cystoscopy, MRI was performed and it revealed a lobulated tumor protruding to the bladder (Figure 1B, 1C). The tumor originated from prostate and had similar presentation as prostatic hyperplasia nodule on T1, T2 weighted and Gadovist enhanced images. The mass was confirmed to be a recurrent BPH nodule protruding into bladder. The patient had been treated with silodosin and dutasteride but still had persistent dysuria with post-void residual volume of 123ml. Surgical treatment options were discussed and the patient opted for open suprapubic prostatectomy [6]. Adenoma was enucleated (total weight 90 grams). Following removal of urethral catheter spontaneous urination resumed without any post-micturition residual urine. Pathological diagnosis confirmed BPH. The patient is now symptoms-free 32 months after the operation. PSA is 0.26ng/ml.

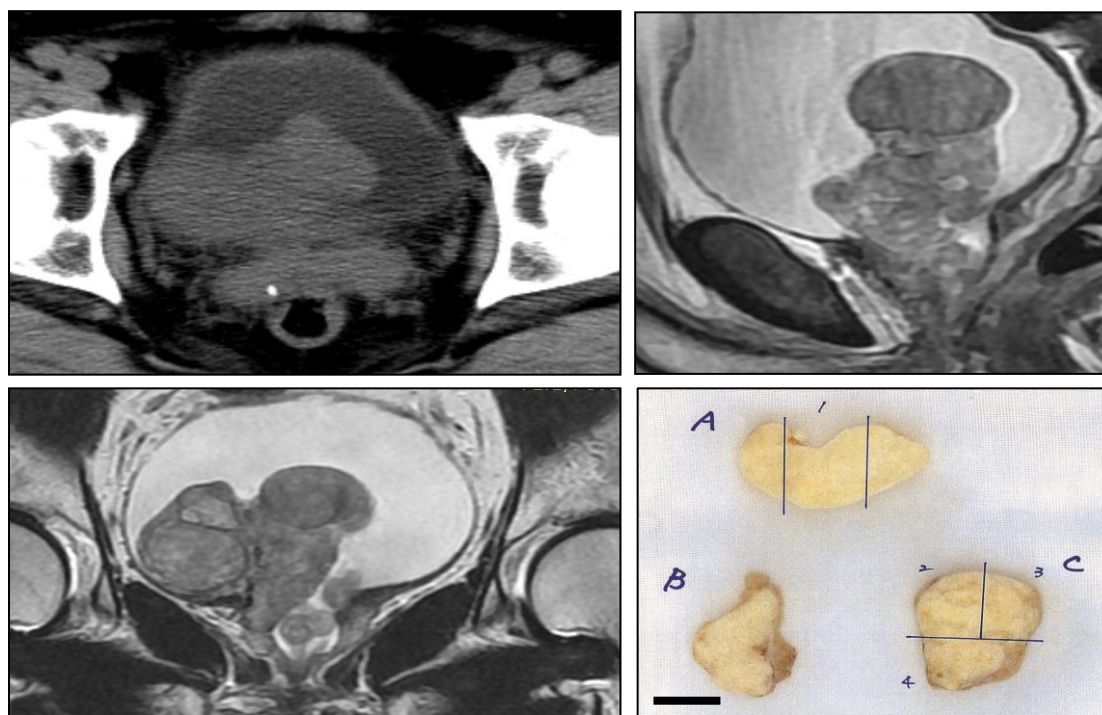


Figure 1: Case 1. Pelvic axial plane CT scan (A). Sagittal (B) and coronal (C) view of T2 enhanced MRI. The images show large solid mass filling the bladder lumen. It continues to the prostate and has similar signal intensity as the BPH (B, C). (D) Macroscopic photo of enucleated BPH nodules (scale bar indicates 2cm). Pathological diagnosis was BPH without malignant tissue.

The second patient was an 83-year old man presented to a local hospital with asymptomatic macroscopic hematuria. He had dementia and a past history of cerebral infarction for which he was taking oral clopidogrel. Twelve years earlier he presented with acute urinary retention after cerebral infarction and Memokath urethral stent was placed in prostatic urethra. Six years later Memokath urethral stent was removed and TURP was performed. Forty grams were resected and the pathological diagnosis was BPH without any signs of malignancy. The patient developed asymptomatic gross hematuria and visited local hospital. Invasive bladder cancer was suspected on abdominal ultrasound examination. The patient was referred to our hospital with the diagnosis of bladder

tumor. Repeated cystoscopy revealed bladder mass with smooth surface and papillary-like tissues (Figure 2A). CT scan demonstrated 10 cm mass in urinary bladder (Figure 2B), no hydronephrosis was present. Large bladder filling mass continuing to prostate was presented on MRI (Figure 2C, 2D). It had similar presentation as prostatic hyperplasia nodule on T1, T2 weighted and contrast enhanced images. Urinary cytology was negative (Class II). Taking into account patient's general condition and anticoagulant therapy, open suprapubic prostatectomy was performed due to shorter operating time and less blood loss. Resected mass was 110 g. Diagnosis of BPH was confirmed pathologically. Postoperative course was uneventful. Spontaneous voiding resumed after removal of urethral

catheter. Preoperative PSA was 8.4 ng/ml and it steeply decreased to 0.5 ng/ml 1 month after the operation. The

patient is symptoms free for 3 months. Both patients were greatly satisfied with the results of the treatment.

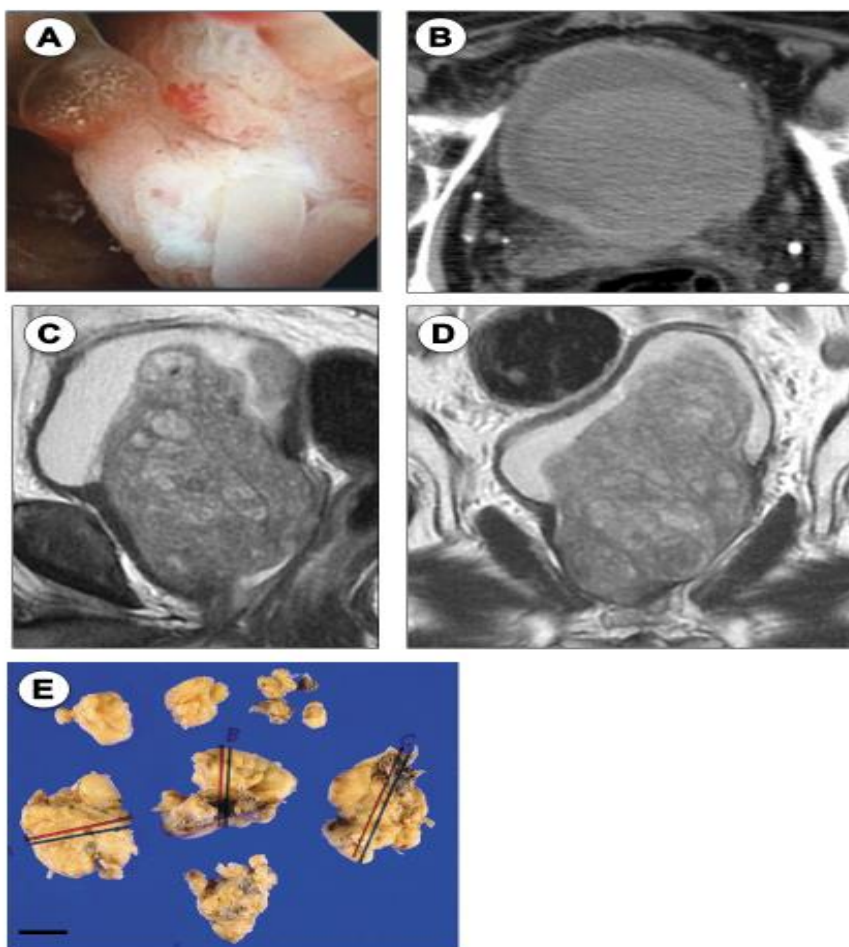


Figure 2

Figure 2: Case 2. Cystoscopy revealed solid mass covered with edematous mucosa and papillary-like tissues (A). Pelvic axial plane CT scan (B). Sagittal (C) and coronal (D) view of T2 enhanced MRI. The images show large solid mass filling the bladder lumen. It continues to the prostate and has similar signal intensity as the BPH (C, D). (E) Macroscopic photo of enucleated BPH nodules (scale bar indicates 2cm). Pathological diagnosis was BPH without malignant tissue.

Discussion

Common symptoms of BPH include pollakisuria (especially night pollakisuria), urinary urgency, decreased urine stream and sense of residual urine. Less common symptoms include hematuria and it can be associated with UTI. BPH might coincide with prostate or bladder cancer. Although cystoscopy, urinary cytology and imaging studies are not recommended in the routine initial evaluation of a typical patient with BPH-associated LUTS [2], patients presenting with macroscopic hematuria should undergo full urologic workout including cystoscopy and CT scan or MRI imaging. As in these two cases, BPH might present as a bladder mass, making it difficult to differentiate with bladder tumor on cystoscopy and CT scan. On cystoscopy, BPH nodules might be covered with edematous mucosa resembling papillary-like tissues which makes diagnosis of bladder tumor most plausible. Negative urinary cytology and MRI image may be helpful in correct diagnosis. In most difficult cases cystoscopy with biopsy or even transrectal or transperineal biopsy of a mass could be useful.

Surgical treatment of BPH is indicated in the case of failed voiding trials following acute urinary retention, recurrent gross hematuria, UTI, renal insufficiency secondary to BOO and bladder stones. TURP is the standard of care treatment modality. HoLEP and several types of minimally invasive techniques are being increasingly used to treat BPH. Open suprapubic prostatectomy is becoming obsolete and is reserved for the treatment of large and huge BPH. As HoLEP is not available at our hospital or at any of the affiliated hospitals and TURP in large adenomas is associated with increased bleeding we opted for open prostatectomy in these cases.

Recurrence rate after TURP is about 5% and a few patients undergo 2 or more TURP for BPH recurrence. Both present patients had previous TURP, two and one, respectively. Postoperative anatomical changes of the bladder and recurrent BPH, which had atypical presentation on US and CT scan, made it difficult to make a correct diagnosis without thorough urological examination.

Conclusion

BPH might be asymptomatic or manifest with various symptoms. BPH might present as a bladder mass, making it difficult to differentiate with bladder tumor. Asymptomatic hematuria is a rare symptom of BPH which needs differential diagnosis with bladder stone, UTI, urothelial and prostate cancer. Thorough urologic examination including CT scan and MRI imaging can help to make a correct diagnosis of BPH.

Take Home Message

BPH might present as a bladder mass, making it difficult to differentiate with bladder tumor.

Declarations

Consent: Written informed consent was obtained from the patient for publication of this Case Report and any accompanying images.

Availability of Data and Material

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of Interest

The authors declare that they have no competing interests.

Authors' contributions

SH, VB, KH, KO, DC, SF, TK, MK, YK, JT, KN and IS made substantial contributions to conception, acquisition of data; SH and VB have been involved in analysis and interpretation of data, drafting and revising the

manuscript; IS conceived of the study, interpreted the data; SH and IS have given final approval of the version to be published. All authors read and approved the final manuscript.

Funding

No funding to declare.

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