

CASE REPORTS

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# Giant prostatic hyperplasia: case presentation of the second largest prostate adenoma

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## Abstract

**Background:** Benign prostate hyperplasia is one of the most common diseases in middle-aged or older men. Approximately 50% of men over 60 years old suffer from benign prostatic hyperplasia. Giant prostatic hyperplasia is defined as a prostate exceeding 500 g. In all the literature, ten case reports were published with giant prostatic hyperplasia.

**Case presentation:** In this case report, we present a 72-year-old man with edema of lower extremities. In physical examination, bilateral pitting edema of the lower extremities was detected. Serum prostate-specific antigen level was > 100.00 ng/ml. He did not have lower urinary tract symptoms. International Prostate Symptom Score (IPSS) and uroflowmetry results proved that the patient did not have lower urinary tract symptoms. Radiologic imaging revealed a huge pelvic mass behind bladder. Grade 1 hydronephrosis in the right kidney was detected, but serum creatinine value was normal. This mass was excised with open surgery. This mass was measured 1090 g, and histopathologic examination showed benign prostatic hyperplasia. The patient had no complication at the 12-month follow-up. After 5 years, prostate volume was calculated approximately 108 cc by computer tomography but still the patient did not have any lower urinary tract symptoms.

**Conclusion:** It is important to approach the retroperitoneal mass. Clinicians usually think about malignancy, but sometimes that mass can be relevant with benign process. Intra-operative biopsy can help clinicians for both diagnosis and surgical approach. In this case presentation, we report a patient with one of the largest sizes of prostate gland that measured 1090 g.

**Keywords:** Benign prostatic hyperplasia, Huge prostate, Open surgery

## 1 Background

Benign prostatic hyperplasia (BPH) is one of the most common diseases in middle-aged or elderly men [1]. This disease can usually cause lower urinary tract symptoms, renal failure or pelvic symptoms such as pain. BPH is determined by digital rectal examination, uroflowmetry and radiographic imaging. Rarely, prostate can reach huge size and be seen as an intra-abdominal mass. Giant

prostatic hyperplasia is defined as a prostate exceeding 500 g [2]. Unlike classical benign prostatic hyperplasia symptoms, these types of giant prostatic hyperplasia may be recognized clinically by compression symptoms such as edema in the extremities, decreased peripheral arterial pulse and/or loss of sensation on the skin. Although it can be seen as a retroperitoneal mass in the first evaluation, it may surprise with the results of intra-operative findings and histopathologic examination. In this case, we report a 72-years-old patient admitted to clinic for edema of the lower extremities without lower urinary

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tract symptoms. After operation, a giant prostatic hyperplasia was detected on histopathologic examination with 1090 g.

## 2 Case presentation

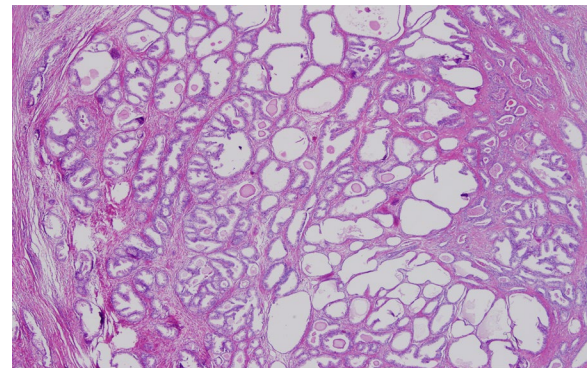
A 72-year-old male was presented with edema of lower extremities. Patient had no lower urinary tract symptoms such as nocturia, dysuria or intermittency. There was no chronic disease or medical drug use in the medical history except total thyroidectomy. On physical examination, there was a palpable mass on umbilical area. On rectal examination, a grade 2, rigid prostate without a nodule was palpated. Serum biochemistry and urine analysis were normal, but serum prostate-specific antigen level was  $>100.00$  ng/ml. In uroflowmetry, Qmax value was 15 ml/s and total bladder capacity was 310 ml. Post-micturition residual volume was 40 ml. Urinary USG revealed a pelvic solid mass behind bladder. Computer tomography enhanced a solid mass measured  $15 \times 12$  cm (Fig. 1). Bilateral kidney contour was normal, and grade 1 hydronephrosis in the right kidney was detected. International Prostate Symptom Score (IPSS) of patient was 6. Transrectal ultrasonographic biopsy was performed, and histopathologic examination revealed atypical small acinar proliferation.

On urethrocystoscopy, bladder outlet was semi-obstructed but prostatic urethra was not obstructed with prostate lobes. After urethrocystoscopy, a midline incision was performed and the peritoneum was medialized to reach the retroperitoneal space. The mass of approximately 15 cm that pushed bladder anteriorly was excised. The mass was found to be related to the prostatic lodge, but the prostatic lodge could not be completely excised due to increased hemorrhage. The patient was

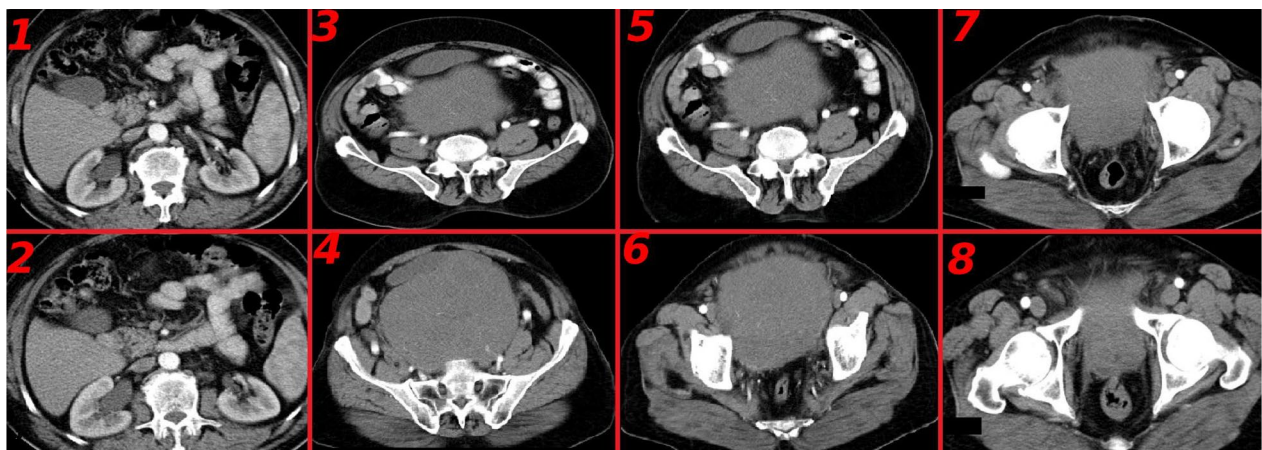
hospitalized 6 days with no complication. Histopathologic examination revealed benign prostatic hyperplasia (Fig. 2). Serum PSA level was 1.9 ng/ml 6 months after surgery. After 5 years, prostate volume was calculated approximately 108 cc on computer tomography (Fig. 3), but still the patient did not have any lower urinary tract symptoms and IPSS was still 6. Informed consent was obtained from the patient.

## 3 Discussion

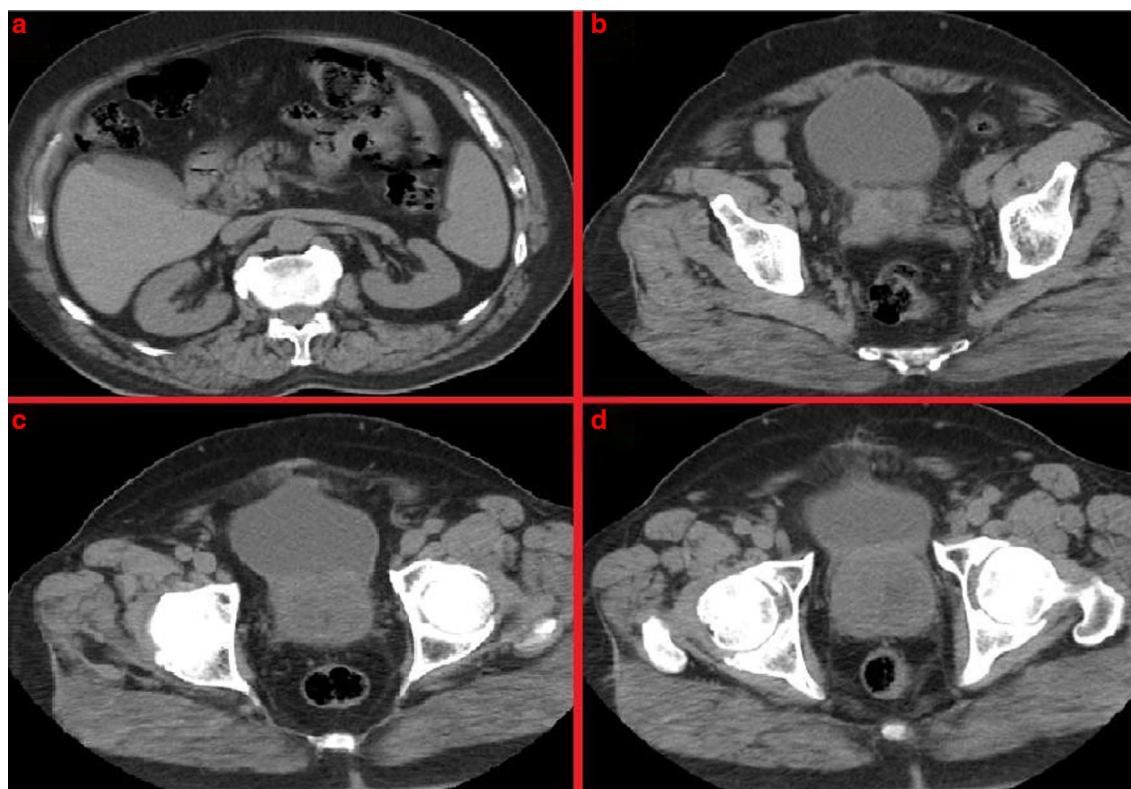
When PSA level is very high and irritative symptoms are less, clinicians' first diagnosis can be prostate cancer. Transrectal ultrasonography-guided prostate biopsy results may not be proportional to PSA level. The term giant prostatic hyperplasia is defined as a prostate exceeding 500 g [2]. Medina-Peres et al. report cases with a size of 2410 g [3] and Tolley DA et al. 1058 g in size [4] (Table 1).



**Fig. 2** Microscopic view of the specimen. Benign prostate tissue with hyperplastic change. H&E stain $\times 40$



**Fig. 1** Computed tomography scan showing the huge prostate upon bladder. At 1–2: upper urinary tract; 3–4–5: prostate pushed bladder anteriorly; 6–7–8: huge prostate extending inferiorly



**Fig. 3** Postoperative imaging of prostatic lodge and kidney. Imaging of the kidney and the prostate after 5 years from the surgery

**Table 1 Giant prostates exceeding 700gr in medical literature**

| Author                  | Weight (g) |
|-------------------------|------------|
| Medina-Peres et al. [3] | 2410       |
| Current case            | 1090       |
| Tolley DA et al. [4]    | 1058       |
| Ockerblad [5]           | 820        |
| Maliakal et al. [6]     | 740        |
| Ucer et al. [7]         | 734        |
| Nelson [6]              | 720        |
| Gilbert [6]             | 713        |
| Wadstein [6]            | 705        |
| Lantzius-Beninga [6]    | 705        |

Clinical diagnosis of solitary subcervical or median lobe hypertrophy can be quite difficult [8]. In some cases, nor digital rectal examination neither radiologic imaging can help to detect median lobe as it grows intravesically. If median lobe grows intravesically, irritative symptoms can be less. Patients may not have any lower urinary tract symptoms, and IPSS result may be misleading.

In our case, an intra-abdominal mass was detected incidentally in a patient who was investigated for edema

in the bilateral lower extremities. He did not have lower urinary tract symptoms. International Prostate Symptom Score (IPSS) and uroflowmetry result proved that the patient did not have lower urinary tract symptoms. Serum creatinine level was normal. Radiologic imaging showed us that mass' diameter was approximately 15 cm. With the PSA level, we thought that the retroperitoneal mass accompanied by prostate cancer but transrectal ultrasonography-guided prostate biopsy result did not confirm our decision.

To our knowledge, our case is the second heaviest prostate adenoma resected by surgery. Also Dominguez et al. report the highest prostate volume with 3987 ml. However, the patient did not need surgery [9].

#### 4 Conclusion

It is important to approach the retroperitoneal mass. Clinicians usually think about malignancy, but sometimes that mass can be relevant with benign process. Intra-operative biopsy can help for diagnosis, and clinicians can change their surgical approach to pelvis masses.

#### Abbreviations

BPH: benign prostatic hyperplasia; IPSS: International Prostate Symptom Score; PSA: prostate-specific antigen.

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**Author contributions**

ED wrote the initial manuscript. OMI and SSK provided the critical review of the manuscript. BH provided data collection of the study. All authors read and approved the final manuscript.

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**Availability of data and materials**

Not applicable.

**Ethics approval and consent to participate**

Our institution does not require ethical approval for this case report.

**Consent for publication**

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

**Competing interests**

The authors declare that they have no competing interests.

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