



Case Report Article

A massive benign prostate delivered intact: a case report

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Abstract

Background: Benign prostatic enlargement (BPH) is an age-related condition. Males above the age of 40 years commonly experience lower urinary tract symptoms (LUTS) related to the progressively growing prostate. BPH is coined by a deterioration in the quality of the patient's life. Medicines along with advanced surgical procedures may not be suitable for treating oversized prostate glands.

Case presentation: A 84-years-old man presented to the urology clinic with severe LUTS that are getting worse over 2 years. He was never catheterized. Medicinal treatments failed to alleviate the symptoms. He has no past medical or surgical history of significance. Prostate ultrasonography revealed a huge prostate of 340cc. He underwent open prostatectomy and enjoyed an uneventful post-operative hospital stay. Histology showed a benign nodular prostatic hyperplasia.

Conclusion: This case presents one of the largest prostates reported in the literature.

Keywords: BPH, LUTS, Prostatectomy, Transvesical, Saudi Arabia.

Background

The normal prostate measures approximately 25cc. The most commonly used threshold for prostatomegaly is over 30cc. Senile prostatomegaly, better known as benign prostatic hyperplasia (BPH), is a common disorder of the aging males. Prostates over 100cc in volume have been recorded in only 4.0% of men above the age of 70 years [1]. The enlarged prostate causes a wide array of irritative and obstructive lower urinary tract symptoms (LUTS) with variable degrees of severity. Retention of urine, as an extreme form of obstructive uropathy could complicate BPH; along with hydroureteronephrosis and renal failure. BPH affects the quality of life in approximately one third of men older than 50 years. As many as 14 million men in the United States have symptoms of BPH. Worldwide, approximately 30 million men have symptoms related to BPH. Autopsy data indicate that over 90% of men older than 80 years have histological evidence of BPH [1,2].

Case presentation

An 84-years-old man presented to the urology clinic at King Abdulaziz Hospital, Makkah, Saudi Arabia in March 2023 due to troubling LUTS. He was complaining of dysuria, urinary

frequency, hesitancy, nocturia, but never catheterized. The patient is a handyman who had no past surgical history. He had had Schistosoma infection at youth. He is a grandfather of 9; smoked for more than 60 years and quit last year. Not on any dietary regime. No history of similar prostate issues in his first-degree male relatives. On physical examination, the patient is ambulant, fit, and biologically young for his age. He is of average body built with no signs of chronic ailments. The prostate is abdominally palpable up to 6cm above the symphysis pubis. Rectal examination revealed a rubbery to firm lobular prostate with preserved median groove. However, it is impossible to reach the gland's upper margin nor its lateral sulci. Urine analysis showed 5-10 pus cells, no blood. Culture was negative for bacteria. CBC and renal functions were within normal limits. PSA total 8.1, free 4.23, ratio 0.52. Uroflowmetry showed an obstructive voiding pattern with max. flow rate of 6ml/sec. Prostate ultrasonography discovered a whopping great 340cc prostate gland occupying the entire bladder cavity with scattered spots of concretions (figure 1). The pre- and post-void images are almost similar. Further images showed normal kidneys and ureters. The patient was scheduled for open prostatectomy. Operatively, under spinal anesthesia, in supine position, using transvesical approach, the bladder was opened to demonstrate sizable prostate lobes filling the whole bladder cavity (figure 2). Careful enucleation was carried out to deliver the prostate lobes intact and to achieve hemostasis (figure 3). The estimated blood loss was approximately 800ml. The excised specimen was submitted for

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histological examination. At the recovery room he was hemodynamically stable, yet transfused 2 units of blood, started on continuous bladder irrigation. Post operatively, he enjoyed a

smooth recovery and was discharged on day 10. Histology showed benign nodular hyperplasia with no necrosis or hemorrhage. No signs of malignancy (figure 4).

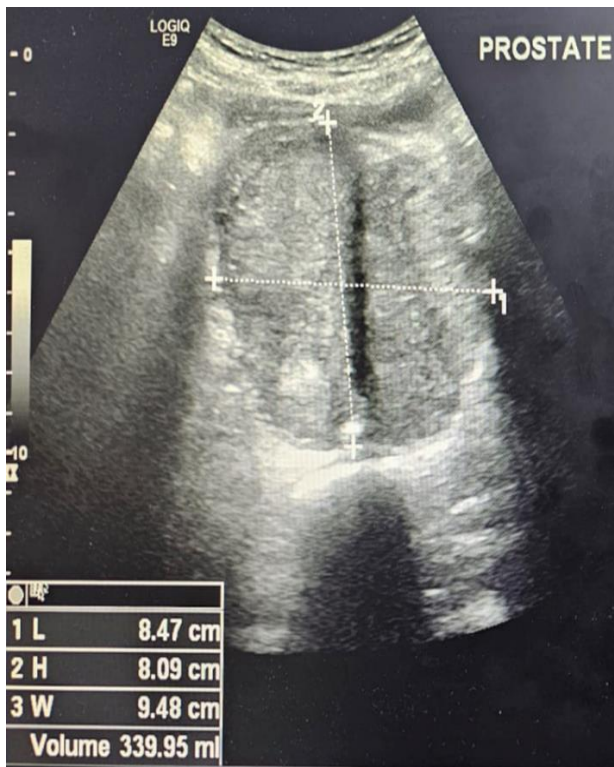


Figure 1: Enormous prostate in ultrasonography

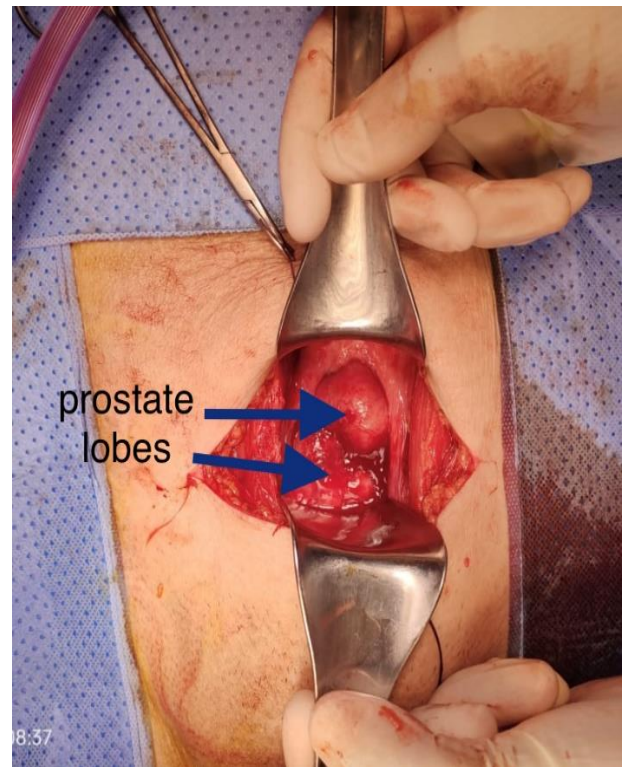


Figure 2: Prostate lobes filling the bladder cavity



Figure 3: Prostate lobes delivered intact

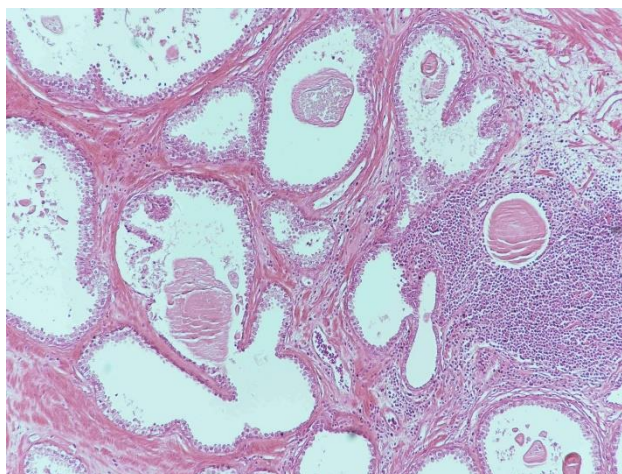


Figure 4a: Benign nodular hyperplasia of the prostate

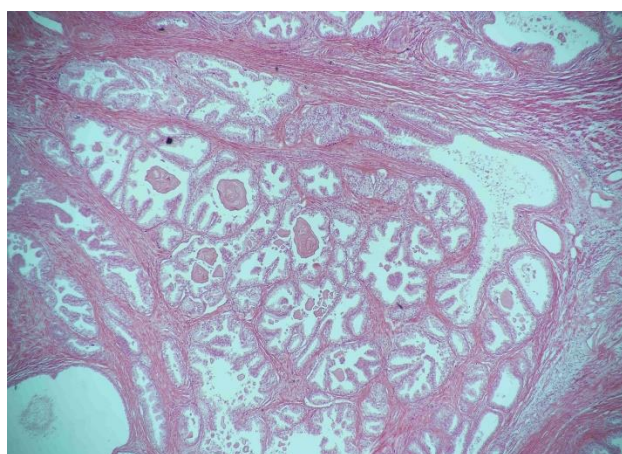


Figure 4b: Benign nodular hyperplasia of the prostate

Discussion

Basically, prostatic growth is considered to be due to the proliferation of acinar (glandular) and stromal cells causing hyperplasia and hypertrophy; respectively. Impairment of programmed cell death (apoptosis) is a recognized factor for BPH development [3]. On reviewing the patient's race, medical, family, drug, and diet history, nothing stood out as a probable cause of the prostate overgrowth. To date, researchers have not identified any specific cause for the massive enlargement of the prostate. Nevertheless, possible causes include the higher testosterone levels, 5-alpha-reductase activity, androgen receptors expression, and growth factors activities [4]. Given the fact that serum testosterone levels decrease with age while the development of BPH increases, suggests that other agents play etiologic roles. Possible factors include metabolic syndrome, hyperinsulinemia, norepinephrine, angiotensin II, and insulin-like growth factors [5]. Exaggerated or over-expression of growth factors combined with the absence or reduction of inhibitory factors have been proposed as possible mechanisms [6]. The mutation of certain proto-oncogenes such as Ras and c-erbB-2 may also be involved, developing a continuous cellular proliferation signal. In addition, the loss of influence of the p53 suppressor gene through its mutation or deletion, which would allow for abnormal cell proliferation [6]. Different transurethral surgical techniques and minimally

invasive procedures are ideal for small to medium-sized prostates, whereas open surgery is recommended for bigger prostates. As a matter of fact, it would be impractical and unsafe to laser-ablate or resect huge glands. In spite of the massive volume of the prostate in this case, the patient was never catheterized. This supports the notion that urinary symptoms do not necessarily correlate with the size of the prostate.

Conclusion

This case presents one of the largest prostates reported in the literature. It also strengthens the belief that symptoms do not necessarily correlate with the size of the prostate. Prostatic open surgery is still recommended for massive glands.

Abbreviation

BPH: Benign Prostatic Enlargement; LUTS: Lower Urinary Tract Symptoms

Declaration

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Availability of data and materials

Data will be available by emailing atifkatib@gmail.com

Authors' contributions

Atif Katib (AK), operated the case and authored the first draft. The study's idea is his. He reviewed and approved the final draft. Bassem Dakkak, (BD) assisted the operation and searched the literature for over-sized prostates. He reviewed and approved the final draft. Mohammad Aldosari (MA), mined the data related to prostate histology and PSA results. He reviewed and approved the final draft. All authors read and approved the final manuscript.

Ethics approval and consent to participate

We conducted the research following the Declaration of Helsinki. Ethical permission (approval letter) was granted by IRB committee at Makkah General Directorate of Health Affairs [Ref. No.: H-02-K-076-0623-971 on 23 June 2023].

Consent for publication

Not applicable

Competing interest

The authors declare that they have no competing interests.

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