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Case Study

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AN OUTLINE AND CASE STUDY ON BENIGN PROSTATIC HYPERPLASIA

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ABSTRACT

A feature of Benign Prostatic Hyperplasia (BPH) or prostatomegaly is the onset of bladder emptying and urine storage issues. Most males over 60 years old experience some level of affliction. In this case report we study about BPH, a condition of enlarged prostate. **Presentation of case:** A 53-year-old male patient was confirmed to have BPH from the CT abdomen plain report and has undergone TURP procedure. The patient was treated with antibiotics, antiemetics, anti-histamine, proton pump inhibitor. **Conclusion:** The patient has been improved following treatment and discharged in stable condition.

INTRODUCTION

The condition known as Benign Prostatic Hyperplasia (BPH) is characterized by uncontrolled hyperplastic development of the epithelial and fibromuscular tissue in the transition zone (TZ) and periurethral region. There is still no known cause for the hyperplasia after years of research, which limits efforts to develop novel treatments.[1] One of the most prevalent disorders in older men is benign prostatic hyperplasia (BPH). BPH is visible in 30-40% of males in their 4th decade of life, and its prevalence rises almost linearly to 70-80% in people over the age of 80. Lower urinary tract symptoms (LUTS), which typically necessitate medical attention, and benign prostatic enlargement (BPE), which describes an enlarged prostate, must be separated from BPH, which has a strictly histological definition.[2]

Etiology:

A wide range of risk factors, in addition to the direct hormonal actions of testosterone on prostate tissue, have an impact on the etiology of BPH. Testicular androgens are necessary for the development of BPH even if they do not directly cause it due to the direct interaction of dihydrotestosterone (DHT) with the prostatic epithelium and stroma. Prostate stromal cells contain the enzymes 5-α reductase 2, which converts testosterone generated in the testes into dihydrotestosterone (DHT), which makes up 90% of all prostatic androgens. DHT impacts cellular proliferation and apoptosis through having direct effects on stromal cells in the prostate, paracrine effects on cells next to the prostate, and endocrine effects in the circulation (cell death). The breakdown of homeostasis between cellular proliferation and cell death, which results in an imbalance favoring cellular proliferation, is the cause of BPH. Histopathologically, this leads to an increase in the number of epithelial and stromal cells in the periurethral region of the prostate.[3]

Pathophysiology:

In the periurethral region of the prostate, several fibro adenomatous nodules form and are likely to have originated in the periurethral glands rather than the genuine fibromuscular prostate (surgical capsule), which is gradually displaced peripherally by the nodules' progressive expansion. Urine output is gradually impeded when the prostatic urethra's lumen lengthens and narrows. Increased pressure brought on by micturition and bladder distention can lead to diverticula, trabeculation, and hypertrophy of the bladder detrusor. Incomplete bladder emptying results in stasis, which increases the risk of calculus and infection. Even a partial urinary tract obstruction that lasts for a long time might affect renal function and result in hydronephrosis.[4]

Signs and Symptoms:

- Reduced, divided and irregular urine stream
- Dysuria (Delayed, Difficult, Severe urinating)
- Postvoid residual urine volume
- Need to strain to urinate
- Postmicturition dribble
- Postmicturition symptoms
- Ischuria paradoxa (Continuous dribble in overflow incontinence)
- Feeling of incomplete emptying.

Diagnosis:

Early detection of BPH is crucial since untreated cases can result in incontinence, kidney or bladder damage, bladder stone, and urinary tract infection. It's crucial to distinguish BPH from more dangerous conditions like prostate cancer. The following test are the most typical, though they differ from patient to patient:

- Urine flow study
- Digital rectal examination
- Prostate specific antigen (PSA) blood test
- Cystoscopy
- Transrectal ultrasound and prostate biopsy
- Transabdominal ultrasound
- Prostate magnetic resonance imaging (MRI).[6]

Treatment:

Pharmacological management

- α-adrenergic antagonist – Prazosin, terazosin, silodosin, tamsulosin.
- 5-α reductase inhibitors – Finasteride, dutasteride.
- Phosphodiesterase inhibitor – Tadalafil.
- Anti-cholinergic agents – Darifenacin, oxybutynin.
- β_3 adrenergic agonist – Mirabegron.[7]

Surgical intervention:

- Transurethral resection of the prostate (TURP)
- Transurethral incision of the prostate (TUIP)
- Simple prostatectomy.[8]

Case description:

Mr. S, a male patient of 53 years presented to the Urology department with the complaints of increased urine output for last 2-3 months and hematuria. He had an episode of acute urinary retention and undergone catharized cystoscopy 10 days prior to admission. The patient has no past history. On admission, the patient has increased post prandial blood sugar (157mg/dl) and other vitals like Blood pressure (110/80mmHg), Pulse rate (88beats/mins), Respiratory rate (20 breaths/min) and Temperature (97.1^0F) was normal. The CT Abdomen Plain reports shows that Feature suggestive of cystitis with bilateral Hydroureteronephrosis (Vesico ureteric reflux), Fatty liver and prostatomegaly. From the patient's demographics and imaging study report the patient was diagnosed to have, Prostatomegaly. Then, the patient was proceeded with Transurethral Resection of the Prostate (TURP) in Lithotomy position under the local anesthesia Inj. Bupivacaine (heavy) 3.2ml + Inj. Clonidine 30 mcg.

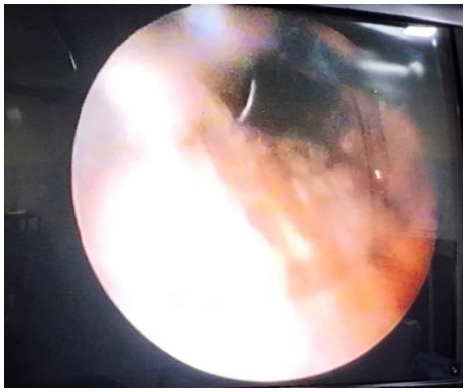

Figure: 1

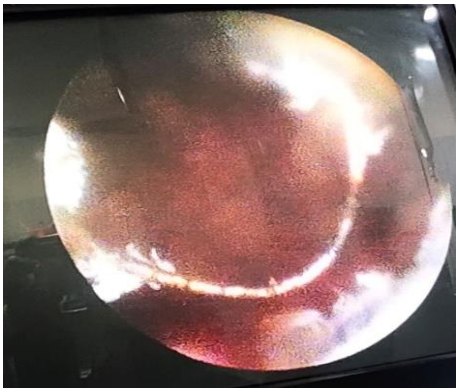

Figure: 2

SOURCE: Vivekananda Medical Care Hospital, Elayampalayam

Following the procedure, the patient was treated with the following drugs: Inj. Cefotaxime 1g BD (Antibiotic), Inj. Ranitidine 50mg BD (H2 Receptor Blocker), Inj. Tramadol 50mg STAT (opioid Analgesics), Inj. Ondansetron 4mg STAT (Anti emetic), Inj. Promethazine 2ml IM (Antihistamine). The patient condition is improved on the course of treatment and the patient was discharged in stable condition.

CONCLUSION

In this case report, we have presented a case of 53 years male patient diagnosed with prostatomegaly. The patient was treated with antibiotics, H_2 Receptor Blockers, Opioid analgesics, Antiemetics and Antihistamines. The patient condition improved on subsequent days and was discharged. Transurethral Resection of the Prostate (TURP) frequently provides immediate symptom relief. Within a few days, the majority of men notice a considerable increase in urine output. It is occasionally necessary to receive follow-up treatment to reduce symptoms, especially years later.

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