

Benign prostate obstruction in the primary care setting: A Case Report and Review

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Introduction. Benign prostatic hyperplasia is a prevalent issue among the elderly. The prevalence continues to rise every year and disrupts the patient's quality of life. It is often observed that individuals with this disease frequently exhibit lower urinary tract symptoms (LUTS) due to bladder outlet obstruction (BOO). The case was reported at Tanjung Kasuari Community Health Centre, Sorong City, West Papua, Indonesia.

Case. An elderly male, 69 years old, came with complaints of highly frequent night urination (nocturia), experienced a weak urine flow, and difficulty postponing urination (urgency). The patient was treated with empirical therapy of Oral Tamsulosin 0.4mg once daily for 2 weeks and lifestyle modifications.

Conclusion. Primary care physicians play an important role in early detection, predominantly in remote locations, but in complex cases when a more precise diagnosis and further management is necessary, consider referring immediately to urologists.

Keywords: Benign prostatic hyperplasia (BPH), Lower urinary tract symptoms (LUTS), Primary care physicians

Introduction

Benign prostatic hyperplasia (BPH) is a prevalent issue among the elderly. This condition affects more than 50% of men over 50 years old and will escalate to 70% of men over 80 years old. The prevalence of this condition continues to rise every year and disrupts the patient's quality of life. In Indonesia, although the number of cases has not been well recorded, indeed it is a common problem among the elderly. Previous retrospective studies have shown that the majority of BPH patients are between 60-69 years old. It is often observed that individuals with this disease frequently exhibit lower urinary tract symptoms (LUTS) such as storage, voiding, and post-micturition symptoms due to bladder outlet obstruction (BOO). These symptoms are common and can have a significant negative impact on the patient's quality of life. Management through lifestyle modifications, medication, or surgery must be considered as viable treatment options. Healthcare providers and patients must engage in a decisive discussion to determine the best course of action that can significantly enhance the patient's quality of life [1-2]

The primary treatment for this particular disease is typically performed by urologists equipped with adequate resources. However, due to limited resources present in the West Papua district, it is crucial to optimize treatment management in primary care services. We would like to present a case of benign prostate obstruction that was managed in a primary care setting.

Case Report

An elderly male, 69 years old, came to the Community Health Centre at Tanjung Kasuari, Sorong City, Western Papua Province with complaints of not sleeping well for the last few days due to highly frequent night urination (nocturia). He could wake up and urinate five to six times at night. He had experienced these problems since last year, but the symptoms had worsened. The patient also felt pain while urinating in the past two days ago, which was experienced at the end of urination. He also complained that he had to urinate again around two hours after last urinated, but this was not always the case. He did not experience the sensation of incomplete emptying after urination. He frequently experienced a weak urine flow, but it

always went smoothly without any stuttering. He often reported difficulty postponing urination (urgency), but he never needed to strain to initiate urination.

The patient denied any history of fever and explicitly stated the absence of urinary incontinence or hematuria. Despite having hypertension, the patient confirmed the absence of any other previous illnesses, such as diabetes mellitus or heart disease. The patient had never taken any medication before. He rarely visited healthcare facilities and had quit smoking for the past 20 years, after having smoked when he was young. The patient also reported no family history of cancer.

On the physical examination, all vital signs were within normal limits. However, the patient reported pain in the lower abdomen with a score of 2-3. The bladder was not palpable during the abdominal examination. On digital rectal examination, the prostate gland is palpable and smooth, its size is approximately three fingerbreadths, with no palpable nodules. Other indicators were within normal limits.

The patient has been diagnosed with LUTS due to Benign Prostate Obstruction with Moderate Symptoms as per the International Prostate Scoring System (IPSS), with an IPSS score of 13. The patient has been prescribed empirical therapy of oral Tamsulosin 0.4mg once daily for 2 weeks. Additionally, the patient has been advised to make certain lifestyle modifications, including avoiding alcohol and caffeine, and drinking less before sleep. After two weeks of the initial therapy, the patient reported that the symptoms had significantly improved. The IPSS score was reduced to 5 (Table 1).

Table 1. IPSS score before and after treatment of oral Tamsulosin 0,4 mg

IPSS Score	Initial Assessment	2 Weeks Followed Up
Incomplete Emptying	0	0
Frequency	4	2
Intermittency	0	0
Urgency	2	1
Weak Stream	2	0
Straining	0	0
Nocturia	5	2
TOTAL	13	5
Quality of Life	3	1

Discussion

Benign prostatic hyperplasia, well known as BPH, is a non-cancerous growth of the prostate gland, a histological diagnosis that refers to the proliferation of smooth muscle and epithelial cells in the transition zone (TZ) and periurethral area (PuZ). This disease is a common problem among the elderly. Autopsy studies conducted on prostate histopathology reveal a significant percentage of men aged between 51 and 60 years exhibit pathological features that are consistent with BPH. Previous studies have also found that moderate-to-severe LUTS associated with BPH are prevalent in men aged 50 or older. These symptoms and complications related to BPH-induced LUTS have a significant impact on a patient's quality of life [1-3].

Nocturia, which is a common symptom of BPH, can greatly affect patients' sleep and lead to a lower quality of life. Men with nocturia due to BPH score much lower in quality-of-life questionnaires compared to men without nocturia (46,1 vs 60,9; $P<0,001$). Our patient in this case also complained of nocturia as the main problem. Nocturia is a major risk for falls in older adults. This problem can cause severe injuries such as fractures, head injuries, and prolonged hospitalization. Nocturia can also cause tiredness, lack of focus, and decreased productivity, and it may negatively affect the sleep of the patient's partner and other aspects of their relationship [2-3].

Endocrine factors influence the mechanism of BPH enlargement. Studies in translational science have found a link between androgen metabolism, such as 5 α -reductase type II gene variants, and BPH incidence, suggesting that androgens may influence prostate cancer and BPH. Androgens, specifically those derived from testosterone, are crucial in the development of the prostate. The conversion of testosterone to dihydrotestosterone (DHT) via the 5 α -reductase enzyme is a key step in the AR signaling pathway. Thus, androgens can maintain the growth of prostate cells within BPH. Furthermore, Diabetes is strongly correlated with BPH. Insulin affects the prostate via Insulin-like growth factor 1 (IGF-1), whose receptor is expressed more in BPH stroma. Higher levels of insulin and IGF-1 increase the risk of developing BPH, where larger prostates exhibit the highest levels of insulin and IGF-1 [2].

Lower urinary tract symptoms are commonly experienced by most elderly men. Although the symptoms may be mild, they cannot be ignored. The progression of LUTS varies among individuals. It is a well-established fact that LUTS are primarily

associated with BOO, which is commonly caused by the progression of prostatic enlargement. Due to the progressive nature of BOO, patients with LUTS will deteriorate over time which can lead to acute urinary retention in some cases. To properly evaluate a patient's symptoms, it is important to gather a complete medical history. This includes information about any previous procedures that may provide insight into the current symptoms, sexual history, medication use, and overall health and fitness. IPSS score is a reliable and validated self-administered questionnaire that can provide clinicians with information regarding the severity of symptoms experienced by the patient [4-6].

Digital rectal examination (DRE) is an essential part of the physical examination to identify prostatic enlargement. It is crucial to evaluate the size, shape, symmetry, quality, nodularity, and consistency of the prostate during DRE to distinguish it from prostate cancer. However, it is important to note that DRE's ability to assess prostate volume is limited. A more accurate method to determine prostate volume is through transrectal ultrasound (TRUS), particularly when the prostate volume is greater than 30 mL. It is essential to use TRUS to avoid underestimation of prostate volume by DRE [7-8].

Prostate-specific antigen (PSA) is an established and widely used biomarker for the detection of prostate cancer, but it also helps in diagnosing BPH. A large-scale community-based study conducted in the Netherlands has demonstrated a strong association between PSA levels and prostate volume. It has been established that a PSA threshold value of 1.5 ng/mL is the most effective predictor of a prostate volume of over 30 mL [9-11].

Management of BPH varies significantly between urologists and primary care physicians due to differing views on the choice of therapy. Urologists are more likely to prescribe 5-alpha-reductase inhibitors, combination therapy with an alpha-blocker and 5-alpha-reductase inhibitors, and anticholinergic therapy, while primary care physicians tend to prescribe nonselective alpha-blockers more frequently. The reason for this difference is due to primary care physicians viewing LUTS mostly as a quality-of-life issue, and being less concerned about the progressive nature of the disease [12-13].

Transurethral resection of the prostate (TURP) remains the gold standard treatment for BPH and this specific procedure can only be performed by a urologist. However, recent studies have shown that some medications have undesirable side effects, especially in the elderly. New minimally invasive

options such as Prostatic Urethral Lift, transurethral needle ablation technique, Aquablation, Photoselective vaporization and enucleation of prostate, and Prostatic artery embolization, offer hope for those who haven't responded well to medical therapy and want to avoid TURP's adverse effects [14].

Urologists play a vital role in the care of patients with BPH, particularly in complex cases. Previous studies suggest that patients who initiate care with urologists are more likely to continue medical therapy than those whose care is initiated by primary care providers. On the other hand, primary care physicians must take advantage of their unique opportunity to screen for BPH, predominantly in remote locations where there is no urologist and if necessary, initiate medical therapy to alleviate symptoms and delay disease progression. Consider referring immediately to urologists when a more precise diagnosis is needed, especially in cases with elevated PSA levels and moderate-to-severe LUTS [12-13].

Conclusion

Primary care physicians play an important role in early detection of BPH, predominantly in remote locations, and initiating medical therapy to alleviate symptoms and delay disease progression. But in complex cases when a more precise diagnosis and further management is necessary, consider referring immediately to urologists.

Conflict of interest

The authors declare that they have no conflict of interests.

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