Benign Prostatic Hyperplasia: Problems and Solutions

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Abstract

Benign prostatic hyperplasia (BPH) is an enlargement of the prostate due to the growth of an adenoma which is located inside it. An adenoma is a structure that completely surrounds the urethra (the canal where urine passes) giving a compression to it. As a result, we will have two types of symptoms, those related to the difficulty of emptying the bladder, lowering of urinary pressure which is also one of the most common symptoms referred to by patients. This decrease in pressure occurs so gradually that it has happened that patients come blocked without noticing anything before. Another symptom is constriction to start urinating in order to overcome the effect of adenoma pressure on the urinary tract; also these patients refer to urine residue after urination. Patients need to urinate every 1 hour after every 30 minutes and so on depending on the stage of the disease. The purpose of this research is to present from a medical practice and personal experience a view of benign prostatic hyperplasia, the symptoms, the way of diagnosis, the time when the patient should consult a doctor - urologist. In this research paper there is also described if BPH leads to prostate cancer, then, prostate treatments, intervention methods, etc. To carry out this research paper I have relied on empirical evidence, specifically I have presented the knowledge gained from direct observation and my professional experience as an urologist for more than ten years. In addition to the empirical method, desk research was used, which is another name for secondary research and is not related to data collection.

Keywords: Benign Prostatic Hyperplasia, male, urethra, patients, enlargement.

INTRODUCTION

Changes in the prostate gland start around the age of 45 and show themselves as growth at the age of 50. This growth continues at varying rates until the end of life. With advancing age, it is thought that the sensitivity of the prostate to the male hormone called testosterone increases and as a result, prostate enlargement. Prostate enlargement is often a benign event, so it is called benign prostate enlargement or benign prostatic hyperplasia (BPH). Some of the prostate enlargements are malignant growths and are defined as prostate cancer. Benign prostate enlargement and prostate cancer are two separate diseases that can be found together but not caused by each other. BPH is a development that goes parallel to the increase in age, almost a part of aging. Therefore, its incidence increases with age. While there are about half of men in the early fifties, the incidence reaches 90% in
men over eighty years of age. What is meant here without growth is an enlarged prostate disease on the basis of histological cell change in microscopic examination. Clinical complaints do not occur in all of these patients. Although prostate enlargement is seen so often, it is not possible for every growth to cause a problem and require treatment. Prostate not only because it is enlarged; If it causes symptoms or harms the body, it is treated.

**What are the symptoms of BPH?**

As the prostate surrounds the urethra, it compresses it as it grows, making it difficult to pass urine from the bladder. Thus, disruption of comfortable urination and a feeling of congestion will occur, and also disturbing symptoms such as frequent urination and burning will occur. Frequent urination, which is one of the most common symptoms, is an important disturbing complaint as it is also experienced at night. Some other symptoms are the feeling of not fully emptying the bladder and the inability to delay when the need to urinate occurs. BPH can cause difficulty starting urine, poor urine flow, post-voiding drip and intermittent urination. Complete obstruction may occur in very advanced cases and requires urgent intervention. Robertson (2018) states “so that doctors can monitor symptoms, they are measured and scored using tools such as the 7-question American Urological Association Symptom Score. A score of more than 8 but less than 20 suggests the patient has moderate symptoms, while a score of 20 or higher indicates severe symptoms” [1].

**How is BPH diagnosed?**

Since people with urinary symptoms may have problems other than prostate, a detailed medical history should be taken. Since the symptoms expressed by the patient show significant personal differences, scoring systems based on answering some standard questions are used. Scoring systems were created to determine the severity of complaints and their negative impact on quality of life. It allows the symptoms of the disease to be divided into mild, moderate and severe. In addition to the usual examinations, finger examination of the prostate from the anus is very important. Urine analysis is also performed during evaluation. The following tests can also be performed depending on the patient's condition:

- Prostate specific antigen (PSA) test: It is a blood test for the possibility of prostate cancer.
- Urine flow test: It shows the urine flow rate and urination pattern.
- Measurement of the amount of urine remaining after voiding: Shows how effectively urine discharge can be achieved.
- Ultrasonography: It provides imaging of the kidney, bladder and prostate.
- Cystoscopy: It is the direct examination of the urethra and bladder using a device.

Referring to UROLOGOX, “initial diagnostic testing may include a urinalysis which will determine whether an infection is causing the bothersome symptoms. A Digital Rectal Exam or DRE will be performed to check the size of the prostate. A urinary cytology, which screens for bladder cancer, may also be performed. Any of these tests may be performed by your urologists if they believe them to be necessary” [2].

**When should the patient consult a doctor?**

A patient should consult a doctor if he realizes that he has the above-mentioned symptoms and is uncomfortable. Also, if he sees blood in his urine, urinates with pain and burning, or if he is unable to urinate at all, he should consult a doctor immediately.
Does Benign Prostate Enlargement Lead to Prostate Cancer?
As it is known, benign prostate enlargement and prostate cancer are separate diseases. The two situations can coexist, but one cannot be the cause of the other. The reason why the two diseases coexist is that they occur in the same age groups. Prostate cancer usually does not show symptoms in the early stages. Medical treatments and surgeries for benign prostate enlargement do not have the ability to prevent cancer. Therefore, annual physical examination and PSA test are necessary for early diagnosis.

What Are the Treatment Options?
The main determinant in the treatment of complaints associated with BPH is the severity of the complaints and the occurrence of some effects thought to be caused by prostate enlargement in the body. The patient can decide together with his doctor which treatment method is best for him. Below, information will be given about the main treatments used in the treatment of BPH.

Watchful Waiting
Watchful waiting is an important option for men with mild symptoms and no complaints. Complaints do not necessarily increase over time. On the other hand, conditions such as recurrent urinary tract infections, bloody urination, presence of stones in the bladder, onset of kidney failure are high risk indicators and require serious treatment. In some patients other than this, urinary complaints may alleviate over time. Watchful waiting can avoid the side effects and high costs associated with medication or surgical treatments.

Drug Treatments
Today, it is the most commonly used method in the treatment of patients with moderate complaints. There are several groups of drugs currently in use for treatment. In all drugs, the effect is possible with continuous use.

Alpha Blockers
These drugs, some of which are also used in the treatment of high blood pressure, relax the smooth muscles in the prostate and bladder neck and relax the urine flow. Despite the relief they provide, alpha-blocker drugs do not reduce prostate size. They are usually taken orally once a day and their effects begin very quickly. Side effects such as headache, weakness, dizziness and difficulty breathing may occur. Currently in use, there are five different alpha blocker drugs with active ingredients "alfuzosin, doxazosin, tamsulosin, terazosin and silodosin". The therapeutic powers of these drugs are close to each other. However, the blood pressure lowering effects of silodosin and alfuzosin are less than others.

5-Alpha Reductase Inhibitors
In this group, unlike the previous group, there are drugs that act by shrinking the prostate, containing "finasteride and dutasteride" as active ingredients. The effects of these drugs take longer to start and at least 3-6 months are required to achieve the highest effect. The effect is more pronounced in patients with a relatively large prostate.
Herbal Sources
They are mixtures obtained from the roots, seeds or other parts of one or more plants. Scientific data are insufficient in terms of therapeutic powers and mechanisms of action. Serenoa repens (Saw Palmetto), Pygeum africanum and Hypoxis rooper can be cited as the best known examples from this group.

Interventional Treatments
They are different interventions that are applied to patients, with a wide range of difficulty and weight, apart from drug therapy.

Mild Interventions
These are the methods that can be preferred in patients with low risk of surgery or those with high risk of bleeding. Prostatic stents are spiral-shaped instruments placed in the prostate section to keep the urinary canal open. They do not require anaesthesia, but the most important disadvantage is that they cause frequent problems, especially in long-term use. Catheterization or catheter application may also be a way of relieving urinary obstruction in patients with short life expectancy who cannot be applied other treatments due to serious medical problems. The catheter can remain in the bladder continuously or can be inserted and removed at intervals of 6-8 hours.

Surgical Methods
When drug treatments are insufficient, removal of the obstructive prostate tissue, surgical treatments will come to the fore. In addition, surgical treatment becomes mandatory in cases of deterioration in renal functions, recurrent urinary tract infections, inability to urinate, stones in the urinary bladder, severe and recurrent bleeding. Compared to non-surgical methods, the chance of improvement in urinary complaints is higher. However, surgical treatments are more likely to cause risks and adverse events. Treatments applied for benign prostate enlargement do not cure prostate cancer as in other methods and do not reduce the risk of subsequent cancer development.

Open Prostate Surgery: Open prostate surgery is the most effective method in the treatment of patients with large prostates. On the other hand, it has more complications. In large prostates, there is now a form of treatment in which the enlarged tissue of the prostate is removed and the patient can be discharged early with a closed surgery called laparoscopic adenectomy. In addition, open surgery may be preferred in the presence of a large bladder stone with BPH or when there are orthopaedic problems that may prevent positioning for closed surgery. In the open operation, the prostate is removed by making an incision in the lower abdomen. There may be mild to moderate pain after the operation. The urinary catheter is usually removed in 5-7 days and hospitalization is required during this period.

Both the early consultation of the patients to the doctor and the early diagnosis and the great improvements in endoscopic methods, enabled the majority of surgical treatments to turn into closed interventions. Closed surgeries are interventions performed using special tools that are entered through the urinary tract and under direct observation through the camera image.

Closed Prostate Surgeries: Standard closed prostate surgeries are known as Transurethral Prostate Resection (TURP). A transurethral resection of the prostate (TURP) is a surgical procedure that involves cutting away a section of the prostate [3]. TURP is the most widely used surgical method in the treatment of BPH. As in all closed surgeries, the enlarged prostate tissue
is cut and removed in small pieces by entering through the urinary canal. Since there is no open surgical incision, removal of the urinary catheter and hospital stay is limited to a few days. The aim of all treatments is to reduce or eliminate the complaints related to the disease and to prevent other bodily harm that may arise from the disease. Urinary complaints significantly improve in approximately 90% of patients with TURP and in 95% with open surgery. There may be some temporary or permanent problems in the early and late period after surgery.

Bleeding and infection in the early period after TURP; In addition, problems in wound healing may occur after open operation. In the late period, retention of ejaculation fluid (semen) into the bladder or stenosis in the urinary canal may be observed.

**Laser Surgeries:** One of the energies used in the surgical treatment of enlarged prostate tissue is laser energy. Operations using laser are performed using endoscopic methods and tools that are very similar to prostate surgeries. The method descriptions differ according to the type of laser energy used. The two techniques are more commonly used than the others. These are Holmium laser prostate surgeries (HoLAP and HoLEP) and photo selective prostate evaporation (PVP), known as greenlight. HoLAP and HoLEP are methods applied by vaporizing the prostate using Holmium laser energy or by cutting it out. Its advantages are that it causes less bleeding, the recovery time is short and it can be applied to large prostates (HoLEP).

**CONCLUSION**

When it comes to treating benign prostatic hyperplasia it should be noted that in the first instance the patient should not be operated on unless he has undergone drug treatment. There are clear protocols of the European Society of Urology which must be applied correctly and honestly by all urologists. Thus, for example, surgery is necessary when medical therapy fails and the patient has no clinical improvement despite being under therapy, when the patient is placed a urinary catheter, when we have the presence of infections, the presence of bladder stones, the appearance of diverticula and finally renal failure caused as a result of obstruction.

We can conclude that the gold standard is trans-urethral resection of the prostate, then all other techniques (TUI-p, Prostate Vaporization, Green-light resection, etc.) have been developed based on this technique and to make the operation as safe as possible per patient. It should be noted that in the case of prostates larger than 80 grams, open surgery or what is called trans-vesicular adenectomy should be preferred.

**REFERENCES**

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