CHAPTER FIVE
BENIGN PROSTATIC HYPERPLASIA

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Each year at the American Urological Association Convention, about 150 papers on BPH are presented. BPH is one of the most prevalent health problems among aging men. It has been estimated that about six million men in the United States over the age of 50 and another 17 million men world-wide suffer from BPH. The BPH symptoms include increased frequency of urination, a sudden urge to urinate and difficulty in urinating or a weak flow of urine. These symptoms may cause a diminished quality of life (QOL). It is possible that the excessive tissue growth can completely compress the urethra so that little or no urine can be passed. At this time, it definitely causes a diminished QOL.

In the United States, about a half million men each year are being treated for BPH with various types of surgery. More than 1.5 million men are being treated each year for BPH with drug therapy. To date, alpha-blockers have been considered the most effective pharmaceutical and non-surgical treatment for BPH. The single greatest cost to Medicare, at close to 3 billion dollars per year, is for cataract treatments. The next greatest cost, at over 2.5 billion dollars per year, is for BPH treatments. The greater expense for cataracts is because it includes both men and women and each of the two eyes are affected.

What BPH Is

Benign prostatic hyperplasia (BPH) is a non-cancerous tumor. The prefix hyper- means above, beyond or excessive; the suffix -plasia means to form. Hyperplasia is defined as an abnormal increase in the volume of a tissue or organ caused by the formation and growth of normal cells. BPH is sometimes called benign prostatic hypertrophy. The suffix trophy means nourishment. So literally, hypertrophy would mean excessive nourishment. The term benignus or benign is Latin for mild. It is the opposite of malignus or malignant, which is Latin for bad. Even though BPH is not malignant, there are times when it can be rather bad if it prevents you from urinating.

The term urine is from the Latin urina and it is also related to the Greek ouron. Another term used often in the medical literature is micturition, which is from the Latin to pass urine. And of course common terms that mean the same thing are pee and piss which is usually considered a bit vulgar. (It seems strange to me that it's okay to say almost anything in Latin or Greek, such as coitus, feces, flatulence but the more common terms are vulgar).

BPH is very common among older men. Four out of every five men between the ages of 50 and 60 will have enlargement of their prostate to some degree. It will

be so enlarged in about 95 percent of the 80 year old men that they may need treatment. It may grow so large that it constricts the prostatic urethra and obstructs the passage of urine. The constriction may be such that it causes urine to back up so that the kidneys cannot function properly.

Residual Urine

The obstruction may cause a pool of residual urine to remain in the bladder. This pool may stagnate and promote bacterial growth and lead to infections. If you can't entirely empty the bladder, you will feel as if you have to go, even though you have just urinated. The urologist may check for residual urine by having you drink a liquid that will show up on an X-ray. After drinking the liquid, you will be asked to wait until you have to urinate. Immediately after you urinate, they will take an X-ray of your bladder. If you have any residual urine, it will show on the X-ray.

The bladder is made up of muscles. If the patient has to constantly strain to force urine through the constricted urethra, it may cause the muscles in the bladder walls to thicken and become stronger. But even the stronger bladder muscles may not be able to completely empty the bladder so that a pool of residual urine is left. In some cases as much as three or four ounces is retained in the bladder after voiding. Bacterial infections may arise from the residual pool and may cause the formation of bladder stones.

We are all different. In some cases the prostate may severely constrict the urethra even though it is not enlarged to any great degree. In other cases the prostate may be quite enlarged, yet cause no trouble.

Catheterization

BPH is a condition that has always affected older men. Over four thousand years ago the Egyptians used a hollow reed from those that grew along the Nile river as a catheter for men who had BPH. As any man might imagine, shoving a reed into the penile urethra is not very pleasurable. If you look at the drawing of fig. 4-1, you will see that the urethra is not a straight path. If the penis is held out straight, the path of the urethra curves downward and then upward through the prostate. Today we have flexible catheters. Of course they had no anesthetics in those days, so the men would wait as long as possible before submitting to the painful procedure. Usually several men had to hold the man down while the reed was inserted. The reed catheter would not cure the BPH, but it would give the patient a short spell of relief until his bladder filled again.

If the urethral obstruction becomes so great that no urine passes through, it then becomes a life threatening emergency. This is what killed Thomas Jefferson and several other men a few years ago. We now have several treatments that are much better and less painful than the Nile reed. If the patient cannot pass urine, he can be hospitalized and catheterized with a flexible tube. The normal bladder may hold about one pint. The bladder is highly distensible, but can be very

painful when the normal limits are exceeded. There have been cases where as much as four quarts of urine have been drained from a catheterized man. It makes me shutter just to think about this.

BPH vs Prostate Cancer

BPH is merely a proliferation of normal prostate cells. In the vast majority of men over 50 years old, the whole prostate begins to enlarge. In prostate cancer, a tumor of abnormal cells begin to form. At first it is a small tumor, but it may eventually grow so large that it infiltrates and occupies the entire prostate. A large cancer growth may also cause the urethra to be constricted and blocked to the same extent as BPH.

Another difference is that the BPH tumor may still be fairly soft and pliable. A cancer tumor may be made up of very tightly packed cells. During a digital rectal exam, (DRE), when the doctor puts his gloved finger in the rectum, he can usually detect the difference in the soft normal tissue or BPH and the hard lumpy cancer tissue.

Unlike the normal BPH cells, the cancer cells are not normal functioning cells. Another difference is that the prostate cancer has the capability of infiltrating nearby tissues and organs and metastasizing to distant sites. BPH stays within the prostate capsule. But it sometimes grows so large that it pushes up and presses on the bladder. This pressure and squeezing can partially collapse the bladder and will decrease the volume of urine that the bladder can store. It may also cause a pool to be formed so that some residual urine is retained after the patient has voided.

BPH is much more common than prostate cancer. About 500,000 men will be newly diagnosed with BPH this year. This is in addition to the 1.5 million who are being treated from having been diagnosed in previous years. About 180,000 men will be diagnosed with prostate cancer this year. Another 3 million will have prostate cancer, but may not be aware of it or have any symptoms.

BPH Growth

The prostate has a tough fibrous capsule that surrounds it. As the BPH cells proliferate, they soon fill all of the space within the capsule. As they continue to multiply, they are somewhat limited in their outward growth by the prostatic capsule. The cells continue to multiply so they constrict the urethra that passes through the middle of the prostate. There may be several degrees of constriction. BPH can make it difficult to pee. In some cases it will only cause a diminished flow of urine. In other cases the urethra may be so constricted that the man can only pass urine with great difficulty or not at all. You have probably seen concrete sidewalks that have been buckled up and broken by the growth of tree roots. The increase in the number of cells in a tree's roots can exert enough pressure to break a four-inch thick concrete sidewalk. The cells in your body are basically quite similar to the cells in a tree root. So you can understand how the prostate

cells can overcome the constraints of the prostatic capsule. The prostate may grow from the size of a chestnut, or about ¾ ounce to the size of a large orange. Dr. August Roumani says that he removed an enlarged prostate that weighed over 600 grams. (One ounce is 28.35 grams, one pound is 454 grams so this prostate weighed approximately 1 ¼ pounds.)

Prostate Development

Most glands in the body grow to a certain size then stop growing. The prostate is about the size of a pea at birth, but it continues to grow and become larger throughout a man's life. Early growth was due to testosterone. But as a man ages, there is less testosterone Since there is less testosterone, there must be some other factor that causes the increased growth of BPH and prostate cancer in older men.

The prostate cells cannot utilize testosterone until it has been converted to dihydrotestosterone (DHT). An enzyme, 5 alpha-reductase, metabolizes the testosterone and converts it to DHT. Some males are born without the ability to produce the 5 alpha-reductase enzyme. The testosterone that they produce cannot be converted to DHT so they never have BPH or prostate cancer. Proscar is a 5 alpha-reductase inhibitor. It is widely used as a treatment for BPH.

Testosterone is also a factor in baldness. A young man who has been castrated will never go bald or have prostate cancer. Merck, the company who makes the Proscar drug, also makes Propecia a drug used for baldness treatments. Propecia is the same as Proscar but in a smaller dosage.

There are certain specific receptors in the prostate that combine with the DHT. During the normal aging process, the number of receptors should decline, along with the decline of testosterone and other body functions. But it appears that these receptors are not affected by aging. Even though there is a decline in testosterone, there may be even more receptors available for using a greater percentage of the testosterone that is present. This could explain why the prostate continues to grow throughout life.

There is a similar problem with breast cancer in women. It proliferates in the presence of the female hormone estrogen. Yet it is most prevalent in women over 50 years of age who have gone through menopause and have stopped producing estrogen. There is a whole lot about the human body and cancer that we still don't know. It may be that there are similar specific receptors in women that promotes breast cancer.

Symptoms and Signs of BPH

Here are some of the symptoms of BPH. Depending on your age, you may have some or all of these symptoms, but you may not need treatment. Most of the following symptoms may also be present in prostate cancer.

Diuria-The need to urinate frequently during the day

Normally you shouldn't have to go more than once every two hours during the day unless you drink a lot of liquids such as coffee, tea or beer. The prostate may be so large that it is pressing on the bladder so that it's capacity is diminished. The normal bladder in a man should have a capacity of 12 to 17 ounces. (Most medical measurements are listed in milliliters (ml) or cubic centimeters (cc) which are both the same. One oz. is 29.57 ml or 29.57 cc. The normal bladder will hold from 355 ml or cc and up to 502 ml or cc.)

Nocturia-Getting up two or more times at night

Most men, and a lot of women, have to get up at least once during the night, especially if they have had a lot to drink in the evening before bed time. But men who have BPH may have to get up several times during the night. He may only void a small amount each time. It is possible that the prostate has become so enlarged that it presses on the bladder and prevents it from holding as much as it normally should. Nocturia is the most common BPH symptom that causes men to see their doctor.

Nocturia is not a guarantee that you do or do not have BPH. Even if a person has had a radical prostatectomy, he still may have to get up two or more times at night.

Urgency, feeling that you cannot wait

You may have the feeling that you cannot wait. It may feel as if your bladder will burst before you can get to the toilet.

Hesitancy or Difficulty in starting the urine

If you have to stand there for more than five or six seconds trying to find the right button to push, it could be a sign that all is not well below. Of course, the time and place may also make a difference. If you are in a crowded public restroom and you think everyone is staring at you and your equipment, finding the right button to push may be difficult even if you don't have BPH.

Straining

You may have to strain to force urine through the constricted urethra. This can cause thickened bladder muscles. Constant straining may also cause the bladder muscles to simply give up and not work at all.

Many men wake up in the morning with an erection and an urge to urinate (a pee hard on). In this case you almost always have to strain to get it started. The reason is that the bladder sphincter, or valve, is supposed to remain closed in the presence of an erection. This is to prevent any ejaculate that might occur from entering the bladder. After a transurethral resection prostatectomy (TURP) this valve is usually damaged. In this case, quite often when an ejaculation occurs, the semen takes the shorter route into the bladder. This is called retrograde emission. We will discuss it in more detail later.

Dribbling and difficulty in stopping

It is bad enough that you may have trouble starting it, but you may not be able to stop it. At least, not completely. A person with BPH may think that he is all

finished. He may stand there and shake it for five minutes, but the minute he puts it away and zips up, it will leak all over the front of his pants. If you are late for an important meeting or in a hurry, it will be even worse than usual. It can be terribly embarrassing.

Decreased size or caliber of the stream

A young man may have a stream that seems to be about a fourth of an inch in diameter. A man who has BPH may have a stream less than a sixteenth of an inch in diameter. This would be due to the constriction of the prostatic portion of the urethral tube.

Decreased strength and force of the stream

When I was young I could stand at one end of an open trough type public urinal and knock a fly off the wall ten feet away. My stream was so weak before my prostatectomy that I couldn't disturb a fly that was as close as one foot away.

Feeling as though you still have to go

You may have just finished, but you may still feel like you have to go.

Dysuria-Pain or burning during urination

Any pain or burning sensation could be due to irritation of the urethra. If the patient is unable to completely empty the bladder, it may lead to bacterial infection which may cause pain and burning during urination. Pain and burning could also indicate that you have an inflammation, prostatitis, bladder stones or prostatic stones.

Squat to pee

When I was young, calling a boy a sissy was about the worst thing you could call him. When we really wanted to put a guy down we would say that he was such a sissy that he had to squat to pee. If you have difficulty in peeing, you might try to do it squatting or sitting on the commode. In some men it seems to help relieve the obstruction a bit. Just be sure to close the bathroom door so that nobody will see you and call you a sissy.

Complete retention of urine

This is an emergency situation. The patient should be immediately hospitalized and treated.

Nausea, dizziness, unusual sleepiness

These symptoms may occur if there has been kidney damage due to the urine blockage.

Tabulating Your Symptoms

You can do a self evaluation. Rate the symptoms in Table 5.1 from 0 to 5 as to how you are affected by each one. If you rated each of the 7 items at the

maximum 5, you could have a score of 35. If you come any where close to this number, you should definitely see your doctor. Of course, you don't really need a score card to know whether you have a problem or not.

This table is now used worldwide. It is sometimes referred to as IPSS for International Prostate Symptom Score. (The IPSS acronym is almost dirty, but seems rather apropos).

Table 5-1 AUA International Prostate Symptom Score Index

Question During Last Month	Not at All	Less Than 1 Time in 5	Less Than Half The Time	About Half The Time	More than Half The Time	Almost Always
1. How often have you had a sensation of not emptying your bladder completely after you finished urinating.	0	1	2	3	4	5
2. Had to urinate again within 2 hours	0	1	2	3	4	5
3. Had to stop and start several times	0	1	2	3	4	5
4. Was difficult to hold it-had to go now	0	1	2	3	4	5
5. Had a weak urinary stream	0	1	2	3	4	5
6. Had to strain to urinate	0	1	2	3	4	5
7. Number of times got up at night	0	1	2	3	4	5

BPH Diagnosis

There are several tests that the doctor will perform to determine whether you have BPH.

DRE

One of the most common tests that a doctor does is the digital rectal exam (DRE). The examination may be a bit embarrassing, but it is quick and easy and can yield an enormous amount of information. The patient bends over on the examining table and the doctor inserts a lubricated gloved finger into the rectum. The posterior and lateral lobes of the prostate can be easily felt through the thin rectal wall. The normal prostate should be about the size of a chestnut and should feel smooth and elastic. The doctor can determine if the size of the prostate is larger than normal. Even though it is larger than normal, it should still feel smooth and elastic if the enlargement is caused by BPH. If the doctor finds any hard nodules or areas of undue firmness, then he may suspect cancer.
A doctor may not be able to positively determine if a patient has BPH by DRE alone. The doctor can only feel the two rear lobes of the prostate.

The middle lobe, which lies in the front portion of the prostate, could be obstructive, but it cannot be felt. Unfortunately, the front middle lobe is the most common site for obstructions that cause BPH symptoms.

Flow Rate Test

If the urethra becomes constricted because of BPH it will cause a reduction in the amount of urine that can be voided in a given amount of time. The stream may gradually become very small and the man may not be aware of it. An important test is to check the flow rate.

The doctor may have you undergo a uroflowmetry test. You will be asked to drink a large amount of water. When you can't hold it any longer the doctor will have you void into a measured container. The container may be part of a very complex computerized test instrument. The instrument can calculate the instant the first drop hits the bottom, then calculates the time until you stop. The uroflowmeter measures the volume of urine that is voided and the amount of time that it takes per milliliter (ml). They usually need about 200 ml to have a valid test. (200 ml is about 7 ounces.) A normal man under 40 years old should be able to fill a 7 ounce cup in about nine seconds, or about 22 ml/second. A normal man between 40 and 60 should be able to fill it in about 11 seconds or about 18 ml/second. A normal man over 60 will need a little over 15 seconds or about 13 ml/second. A man who has BPH may need 20 to 40 seconds to pass 200 ml, depending on the severity of the urethral constriction.
The computerized uroflowmeter or urodynamic system may be rather expensive. At the AUA 2000 Convention, one company had a very expensive urodynamic system. It had a chair similar to a dentist chair, except that it had a v shaped slot in the front. Under this slot was a large funnel and bucket. There was a flouroscope system that focused on the pelvic area and all of this was connected to a computer. The whole system was priced at a mere $180,000. See fig. 5-1. Fig. 5-2 is another urodynamic system that is a bit less expensive.
The whole idea of the urodynamic system is to determine how fast a man can void a given amount. But one can do about the same thing by using a 7 ounce cup and a stop watch. Just drink a lot of water, then use the watch to see how long it takes to fill a cup. Many doctors may use a simple stop watch or a watch with a second hand and a glass beaker with graduated markings. Many people have a shy bladder and have difficult in starting it if someone is watching or timing them. You may be given a stopwatch and asked to time yourself in a private lavatory. A whole lot less expensive than the $180,000 system.

It is important that these urodynamic tests be performed before any treatment is begun. Once the doctor has an idea of the scope of your problem, he may begin a series of treatments. Every so often the urodynamic tests can be repeated and checked against the original test to determine if the treatment is having any effect. If there is no change in the rate of urine flow, then the doctor may change the treatments.

Do Your Own Home Tests
You can do your own tests at home by using a measuring cup and a watch with a second hand. Drink a lot of water, then wait as long as you can to go. Most measuring cups, such as the glass Pyrex cups, have markings in both ounces and in milliliters. It is not necessary to be absolutely precise in these measurements. Your wife may get pissed off if you pee in one of her good measuring cups so you could use something such as a styrofoam or paper cup. Just measure out 7 ounces of water and mark the cup. If you have BPH it will be obvious.

Post Void Residual (PVR) Urine
As the obstruction of the prostatic urethra becomes greater, the patient may not be able to completely empty his bladder. He may be able to start to void, but his small stream may stop for a few seconds then it may start again. This often happens when the man thinks he is finished, shakes it a few times, then puts it away. But the minute he zips up, urine will run down his leg and wet his pants. He may stand there and strain but he still may have residual urine left in the bladder even after it wets his clothes.

There are several ways to detect residual urine. When your doctor examines you, he may feel your lower abdomen to determine if there is residual urine in your bladder. The doctor may have you void as much as you can then he may use a catheter or a cystoscope to drain the residual urine and measure it. In severe cases, there may be as much as a pint or even a quart of post void residual (PVR) urine.

The doctor may order an x-ray urogram. The patient is usually injected with a contrast dye that will show up on an x-ray. Several x-rays may be taken as the dye colored liquid is filtered out of the blood and collected in the bladder. Finally, the patient is asked to void, then another x-ray is taken which can show any urine left in the bladder.

Ultrasonic Imaging
Your doctor may also use an ultrasound machine to determine residual urine. A residual pool of urine can be seen on the ultrasound image. The ultrasound can be used to view the enlarged prostate. Cancerous tumor images can also be seen with ultrasound.

MRI and CT
Magnetic resonance imaging (MRI) machines or computed tomography (CT) machines can also be used. But these machines are very expensive and would probably only be used if there were difficulties in the diagnosis or other complications.

Cystoscopic Examination

Your doctor may also want to do a cystoscopic examination. The prefix cyst is from the Greek kystis which means bladder or sac. The cystoscope is a tubular instrument that can be used to examine the interior of the bladder and other body cavities. It has thin fiber optics which can conduct light and a magnifying lens at the end. The doctor can insert this instrument into the urethra and examine any obstruction in the prostate. He can also examine the interior of the bladder for residual urine, for muscle irregularities and for bladder stones. There are several different types of the cystoscope. It may be fitted with grasping forceps or with a cutting scalpel. The cystoscope has an eyepiece that the doctor can look through, but it may also have provisions to electronically display the image on a television screen.

There are also several different diameters for cystoscopes, catheters, probes and sounds which are measured by the French scale. This scale was devised by a Frenchman named Chevrrier. The English people had trouble pronouncing and spelling his name so the scale came to be known simply as the French scale. Each unit is about 1/3 millimeter so that a 21 French, or 21F, cystoscope is 7 mm in diameter. One mm is .04 inches so 7 mm would be .28 inches or a little more than a quarter of an inch in diameter. It wouldn't be too difficult to insert a 21F cystoscope into the urethra. But many cystoscopes and probes may be a half inch or more in diameter. It makes me shudder to even think of something a half inch in diameter being inserted in my urethra. Fortunately, the doctors may use anesthesia with these instruments.

PSA

The doctor may order a urine test and a blood test to rule out any infection. The blood sample may also be tested for the presence of prostatic specific antigen (PSA). The normal prostate may produce PSA from .2 nanograms per milliliter (ng/ml) of blood and up to 4.0 ng/ml. An enlarged prostate due to BPH may produce as much as 10 ng/ml or more. A cancerous prostate tumor that is the same size and mass as a BPH tumor will usually produce about ten times more PSA than the BPH tumor.
More about PSA in the next chapter.

Biopsy

The doctor may want to do a biopsy to make sure that the enlarged prostate is benign. He may use a spring loaded needle through the wall of the rectum to retrieve a sample of the prostate cells. He may take several samples from different areas of the prostate. It is fairly painless. The samples are sent to a pathology lab for microscopic inspection.

Treatments For BPH

There are several different treatments for BPH. Many treatments involve surgery, but there are also several treatments using devices that are non-surgical. There are also several drugs that are used. Each type of treatment has its advantages and usually some disadvantages.

Surgical Treatments

Surgical treatments may include suprapubic and retropubic prostatectomies. A simple prostatectomy and a radical prostatectomy are very much different procedures. The suffix -ectomy means excision of an organ or gland, but not necessarily the complete organ or gland. A radical prostatectomy means the complete excision and removal of the gland. A radical prostatectomy or complete removal of the prostate, is seldom done for treatment of BPH

TURP

Radical prostatectomy has been called the "Gold Standard for prostate cancer. The Transurethral Resection Prostate (TURP) has been called the "Platinum Standard" for BPH. It uses a resectoscope which utilizes a wire loop and electrocautery to remove tissue. Several crude instruments were made as early as 1888. Many improvements were made by several different men over the next 44 years. In 1932 a man named McCarthy took the best of all the earlier developments and introduced a resectoscope that is basically the same instrument used today. Of course newer lenses and fiberoptics have been added.

The resectoscope is a tube that is about 12 inches long and about a half inch in diameter. The tube contains wires for the electrocautery loop, a light source, and a tube for irrigating water. The normal urethra is about one fourth of an inch in diameter. The patient must be anesthetized in order to force the half inch resectoscope into the urethra. The surgeon looks through the eyepiece and can see the obstructive portions of the prostatic urethra. He uses the wire loop to snip off pieces of the obstruction. Water is used to flush the cut pieces into the bladder. The electric wire loop cauterizes the tissue so that there is little or no bleeding.

The operation may require about an hour and a half. After the operation, the cut pieces of tissue are flushed out of the bladder and sent to a pathology laboratory to be examined for cancer cells. Cancer is found in about 10% of all cases. In many cases, the cancer is a type that seems to be non aggressive. Often, no treatment is necessary except to watch and wait. The patient’s PSA can be monitored and if it rises, then appropriate action may be taken. If the cells appear to be an aggressive type of cancer, the urologist may recommend that the patient have a radical prostatectomy.

After the operation a Foley catheter is inserted through the urethra and into the bladder. The Foley catheter has a small balloon on the bladder end that is filled with water to hold it in place. The catheter is left in place several days to give the prostate a chance to heal.

A TURP usually requires one or more days of hospitalization which can add to the overall cost of the procedure.

Adverse Side Effects

Bleeding And Infection

There may be some bleeding and it is possible that the patient may need at least one unit of transfused blood. With the AIDS fears of today, the doctor may suggest that the patient make an autologous donation of his own blood. If the patient needs it, his own blood would be much better for him.
There is also a chance of infection during the operation. Fortunately, most infections can be controlled by penicillin and other drugs.

Incontinence

All patients will have incontinence to some degree after a TURP. Most patients will overcome it a short time. The reason for the incontinence is that the prostate is closely tied to the bladder. The bladder sphincter is usually damaged to some degree. If the surgeon is not very careful, it may be damaged severely.

Retrograde Ejaculation

Ordinarily during sexual arousal, the bladder sphincter is tightly closed. But if the bladder sphincter has been damaged, it may not be able to close. In this case, during ejaculation, the semen and sperm take the much shorter route into the bladder. The man will have the same orgasmic sensation as before, but the ejaculate ends up in the bladder.

TUIP

A transurethral incision prostatectomy (TUIP) is a fairly simple procedure where cuts or slits are made in the prostatic portion of the urethra. This operation may be less traumatic than a TURP and have less side effects, but it may not be effective in all cases.
The slits are usually made with a special scalpel, but they may also be done with a laser.

The word laser is an acronym for Light Amplification by Stimulated Emission of Radiation. Ordinary light is made up of random incoherent wave lengths. A laser beam is made up of a single amplified coherent wave length. There are several different types of lasers. Some are powerful enough to burn a hole through a diamond. Several types have been adapted for surgical procedures. There are several advantages to laser surgery. One advantage is that the laser coagulates and seals blood vessels so that there is little or no bleeding. The strength of the laser is dependent on the amount of electrical power fed to it. By controlling the input power, the depth of a cut or ablation can be monitored and controlled.

TUMT

Transurethral microwave thermotherapy (TUMT) seems to be a good alternative to surgery. If the prostate cells are subjected to temperatures of about 45 degrees C or 113 degrees F, they will die. The source of the hyperthermia is high frequency microwaves similar to those used in home microwave cooking ovens. But don’t consider crawling into a microwave oven to cure your BPH. (On a recent Jay Leno show, he mentioned that microwaves are now being used to

treat prostate problems. His sidekick, Kevin the band leader, asked, "How does one get his ass in a microwave?")

The microwave instrument systems are designed so that the temperature and the depth of heating are exactly controlled. A report presented at the 1993 AUA convention listed results of 150 patients who had been treated with TUMT. The patients were subjected to a 45 degree C. temperature for about 60 minutes. There was no need for anesthesia, or hospitalization. There was little or no bleeding and little pain. There were no reports of retrograde ejaculation or significant changes in sexual function. The procedure has been used in foreign countries for some time and has just recently been approved by the FDA for use in the US. It would seem possible that TUMT could be used for types of prostate cancer.

It appears to offer very good results. The procedure offers an alternative for those men who are not good candidates for surgery.

TUNA

No, it is not the fish. It means Transurethral Needle Ablation. It uses a low level radiofrequency (RF) of about 490kHz to create a temperature of 50 to 90 degrees C in the area to be ablated. The probe is a special catheter which has two flexible needles at the tip. The needles can be deployed and inserted into the prostate through the urethra. The needles are about 45 degrees apart. They are shielded at their base so that the urethral tissue is not damaged. When the RF energy is turned on, it passes from one needle to the other so that the prostatic tissue between the needles is destroyed. The progress of the treatment can be viewed on a TRUS. The needles can be repositioned so that many areas of the prostate can be treated. The treatment can be an outpatient procedure with local anesthesia. The patient can leave soon after the treatment.

Drug Treatments

Testosterone and BPH

Testosterone is both a blessing and a bane. It is the hormone that makes us horny and hunger for sex. Even women must have a bit of testosterone to have a desire for sex. Without this hormone, not many of us would be here. But prostate cancer and the excessive growth of cells in BPH is directly related to the male hormone testosterone. The prostate cells proliferate and may grow in excessive numbers in the presence of this hormone. If the source of testosterone is removed, many of the prostate cells will wither and die. Of course the source of testosterone is the testes. A man who has been castrated in early life will never have BPH or prostate cancer. Many of the treatments for BPH and prostate cancer are designed to eliminate, hinder or counteract the action of the male hormones.

Hytrin, Minipress, Flomax and Cardura

There are several high blood pressure drugs, called alpha blockers, that act on the nervous system to relax the arteries. Quite often patients with BPH also present with hypertension or high blood pressure. These drugs also have an effect on the smooth muscle of the prostate to some extent. Some of the blood pressure drugs used to treat BPH are Hytrin, Minipress and Cardura.
The prostate is a musculo-glandular organ. It is interlaced with smooth muscle, much like the tubular musculature of the arteries. The smooth muscles of the arteries are controlled by the body's nervous system. One disadvantage of the alpha blockers is that they may not be effective on some prostates. Another disadvantage is that many of the alpha blockers may cause impotence problems.

A Little Booze for BPH
A study using ethanol alcohol for BPH was presented at the 1999 AUA meeting. Ethyl or ethanol alcohol is the drinking kind-It is normally about 80 proof or 40 percent ethanol. The ethanol used for this procedure was absolute or 200 proof. (It probably makes no difference whether it is scotch or bourbon ☺). Methyl alcohol is usually distilled from wood. One should never drink methyl alcohol. It can make one go blind. The ethanol was injected into the prostate and it caused the tissues to atrophy and die.

Unproven and Untested Drugs
We are now in the age of alternative drugs, herbs and medicines. There is no question that there are some very good herbs and alternative medicines that have some merit. But there seems to be a large segment of the population that believes that many herbs and drugs have almost magical powers to cure everything. Most of the drugs and herbs that are for sale at the local health food store have never been properly studied and evaluated. Many people swear that some of these alternative medicines have benefited them greatly. It is possible that some of the benefits that these people receive are due to a placebo effect. Some studies indicate that any kind of drug or sugar pill will have a good or placebo effect about 40% of the time.

If you want to take the alternative type drugs and herbs, please check with your doctor first. Some of them may cause an interaction with your conventional drugs. Most of the drugs probably won't harm you. But most of them won't do you much good either.

Here are some of the drugs and herbs that are supposed to help BPH.

Saw Palmetto
The Saw Palmetto Berry is supposed to do the same thing naturally that the Proscar drug does. No definitive scientific studies have been done in the US. Some studies were supposedly done in France in the early 1970s. Saw Palmetto is usually sold in health food stores. Since it is not FDA approved or controlled, there is no guarantee of the USP standards for purity or potency.

Essiac Tea

Essiac Tea has been around for some time. A woman named Caisse first made it from roots and herbs. It is supposed to cure BPH, prostate cancer and just about everything else. Essiac is Caisse spelled backwards.

Prostata

Prostata is a vitamin and mineral formulation that contains the saw palmetto berry, zinc and several other herbs and natural drugs. The company that manufactures prostata goes to great lengths to procure mailing lists of those men who have BPH or prostate cancer. They then mail out slick brochures with lots of testimonials from “satisfied users”. The ads claim that the drug will prevent prostate cancer and alleviate the effects of BPH. No scientific studies have been done to corroborate any of their claims. They rely on their glowing testimonials instead. I am leery of any ad that has lots of testimonials.

There are many other alternative medicines on the market. If you must try them, use caution. By all means continue to take any medicines that have been prescribed for you.

Here are some alternative treatments for BPH from a web site written by Emily Kane, ND (Dr. of Naturopathy). She also has treatments for prostatitis, prostate cancer and several other diseases. Here is the URL for here site:
http://www.naturopathic.org/articles.lay/EK.prostate.html

Color Therapy

Color therapy is used most often with thin pieces of colored plastic ("gels") over home or office light sources, such as a lamp. The following colors are listed for BPH:

· lemon (helps to dissolve blood clots; acts as a chronic alternative) on front of body; orange (acts as a decongestant) and indigo (an astringent, antipyic, antiemetic, and hemostatic) between genital and anal areas; indigo and violet on prostate; alternate blue and yellow on kidneys for 10 minutes each; drink blue treated water; violet on chest

Stones

A growing number of progressive thinkers like to use semi-precious stones for their healing. The stones may be held, or placed on the affected body part, or placed into the bottom of your drinking water. Consult someone who knows about "healing rocks" for more ideas. Here are a few used in BPH:

Coral, Pearl, Diamond, Topaz , Carnelian, Citrine, Ruby, Garnet

Psychospiritual

The mind is by far the most important aspect in your total well-being. Psychospiritual approaches to healthcare are being used increasingly even in the most conventional of settings. The following ideas about the origins and treatment of BPH should provide some food for thought:

Sexual disturbances associated with chronic masturbation, prior STD's, extramarital affairs with unexpressed guilt feelings and long standing unhappy

relationships; Unhappiness; Prostate represents masculine principle; Mental fears weaken the masculinity; Giving up; Sexual pressure and guilt; Belief in aging; Visualization.
Closing thoughts: What is the symptom preventing me from doing? What is the symptom making me do?

There is a whole lot more of this sort of thing on her site. There are dozens of other sites that offer similar alternative treatments for BPH, all kinds of cancer and any other disease known and unknown to man. To find other sites, just use any of the search engines such as www.excite.com, www.lycos.com, www.yahoo.com, www.altavista.com or any of the other search engines and search for BPH AND Alternative medicine.
From what I have seen of the alternative medicines, the people who benefit most are those who sell them. We will have more to say about alternative medicines and quackery in Chapter 20.

Drug vs. Surgery Costs
At one of the American Urological Association (AUA) conventions, Dr. Terrence Malloy compared surgical methods to drugs for BPH treatment. In the short term, drugs appear to have a cost benefit over surgery. But the drugs may have to be continued for a long period of time. Here are some drug costs and other treatments that he gave for the Philadelphia area:

Drugs

	Dosage	Per Month	Per Year
Proscar	5 mg	$75	$900
Hytrin	5 mg	$60	$720
Cardura	2 mg	$40	$480
Flomax	.4 mg	$50	$600

You should be aware that sometimes other drugs are prescribed in combination with Proscar, for instance Proscar and Hytrin. In this case, the cost for one year would be $1620.

Surgical Costs
Cost for a TUIP usually requires an overnight stay at a hospital, a TURP may require at least one day or more in the hospital. Of course this adds to the overall cost of the procedures.

The cost of TUNA and several other laser ablation treatments may be done as office procedures so the hospital costs could be avoided.

The cost of the office procedures may vary considerably depending on the surgeon. They may range from $6000 up to $15,000 or more. These operations may take less than an hour, but the electronic instruments needed for these procedures may be very expensive. And the doctor must include cost of nurses, receptionists, office space and other overhead costs.

The cost for a TURP is more expensive because the hospital costs must be included. A TURP may cost from $15,000 up to $20,000 or more.

The big advantage of surgery over drugs is that the surgery usually cures the BPH and is therefore a one time cost. About 10% of the surgery patients will have to undergo an additional procedure.

Sometimes there is scarring and strictures due to surgery that requires additional treatment. Often this can be relieved by simply stretching the area with a balloon like device.

Watchful Waiting

Depending on the severity of your BPH, you may not want to do anything. Almost every treatment has some side effects. And they all cost money and time. You must decide whether to suffer the consequences and side effects of treatment or whether you can live with the bother of your BPH.
Alas, life is full of compromises.

Chronic Prostatitis

Prostatitis affects a large number of men. In some cases, it may be very difficult to clear up. Many cases do respond to antibiotics.

It Pays to Advertise

Here are a couple of personalized license plates spotted in California:

CME2PEE ... See Me To Pee, seen by Jerry Bostick

FNOPCME … If No P C Me, seen by Greg Holmes