**Transurethral Resection of the Prostate**

**Overview on TURP**

TURP is the classic treatment for urinary symptoms due to the prostate (prostatism) or BPH. Prostatic tissue is removed and so the physical bulk of the prostate is reduced. Obstruction is reduced and urinary symptoms considerably improved. The operation is performed through the penis and usually there are no cuts or surgical incisions. The procedure is tolerated reasonably well, although associated with retrograde ejaculation. It is the gold standard treatment for BPH with many years of history to support its use.

**Why have a TURP?**

There are several potential reasons for having a TURP:

* urinary symptoms due to an enlarged prostate (BPH) that are bothersome and are not adequately improved by medicines or changing one's lifestyle
* urinary symptoms due to BPH that are bothersome and cannot be treated by drugs or other minimally invasive techniques
* urinary symptoms due to BPH proven to be due to bladder outlet obstruction on urodynamics with a desire to remove obstruction in order to avoid long term problems of bladder outlet obstruction
* The inability to pass urine without a catheter ('urinary retention')
* kidneys that are not functioning properly because the prostate is blocking the bladder
* recurrent urine infections due to obstruction caused by the prostate
* bleeding from the prostate due its enlargement (BPH), which may not have improved with a 5-alpha reductase inhibitor like finasteride or dutasteride
* prostate cancer ('channel TURP'): this is to allow urine to flow and is not intended to be curative

**What are the advantages of a TURP?**

TURP has several advantages. These include:

* rapid removal of prostatic tissue at the time of surgery
* it can be combined with some other procedures such as removing small bladder stones
* many years of data to support its use with a thorough understanding of its advantages, risks and outcomes
* widespread use throughout hospitals in most countries by urologists

**How well does TURP work?**

Almost 9 out 10 men who have a TURP for BPH find that their symptoms are significantly better after TURP providing

* bladder outlet obstruction is proven (e.g. on urodynamic studies)
* bladder that contracts with normal strength and has not become weak.

Men experience a much stronger flow of urine, shorter time in the toilet when passing urine and longer intervals between visits to the toilet. If the bladder did not empty before surgery, then getting up a night may also improve. After a year, the urgent desire to pass urine that some men suffer also gets better.

Men who have had to use a catheter to empty their bladder before find that they can pass urine without a catheter in many cases. However, this is not always true.

**What are the risks or disadvantages of a TURP?**

Most men have little trouble with the procedure and only about 1 in 6 have some form of problem. The most common is the inability to pass urine after the procedure ('urinary retention'). This may occur in about 1 in 14 men (about 6%) and usually resolves after another period of catheterisation.

Blood loss may occur and so anaemia may be a problem in 1 in 25 patients (4%) requiring a transfusion. Occasionally, bleeding results in blood clots in the urine. If these are very large, they may block the catheter. A urinary infection may occur and rarely this can be severe and lead to loss of life. This is very rare affecting less than 1% of men.

The fluid used during the procedure can be absorbed resulting in a drop in the sodium level of the blood. This is known as 'TUR syndrome'. This can occur in 2% of men (i.e. 1 in 50 men). In some cases, this is serious, but it can be avoided by following safe procedures.

Bleeding can occur in the urine for up to 3 weeks after leaving hospital. About 1 to 2 weeks after the operation, blood clots may appear in the urine, which also becomes pink. Drinking fluid and going to the toilet frequently clears the clots.

After the procedure, a strong sense of urgency may develop i.e. an urgent desire to pass urine sometimes associate with urinary leakage ('urge incontinence'). This occurs because the bladder muscle is intrinsically overactive in about 1 in 3 men who have the procedure, and the prostate prevented leakage by its sheer bulk before surgery. Drugs such as tolterodine, oxybutynin or solifenacin can improve these symptoms. This usually resolves by 6 months.

Rarely (less than 1 in 30 men), the muscle mechanism that controls the flow is damaged by TURP leading to incontinence on activity ('stress incontinence'). Pelvic floor ('Kegel') exercises can help this and again this usually resolves within 6 months of surgery. In the most severe cases, another operation may be needed to reduce leakage.

A narrow area may develop in either the urethra, which is known as a urethral stricture, or at the bladder neck, which is known as a bladder neck contracture. This affects about 1 in 30 men after TURP and can explain why urinary symptoms deteriorate after an initial improvement. These may need further surgical procedures before improvement.

Most men (over 70%) find that they have either a very reduced volume of semen or no semen when they have an orgasm and ejaculate. This is called 'retrograde ejaculation'. The semen is passed in the urine. This is not dangerous, but obviously some men may find that unacceptable in which case they should either not have surgery or choose TUNA, which does not have this side-effect.

Erections may get worse or sometimes get better. As it is not possible to guarantee that erections will not be affected, one needs to think about this possibility before undergoing a TURP.

**What are the alternatives to a TURP?**

There are several procedures of which the most common are listed below.

* Transurethral Needle Ablation (TUNA) of the prostate: this is a less invasive procedure than TURP, can be performed in day surgery or as an outpatient, with fewer problems and maintains normal ejaculation. Symptoms are improved after TUNA, but not as much as after TURP.
* green Light PVP laser prostatectomy: Compared to TURP, There is much less blood loss, a shorter hospital stay and reduced chance of needing a blood transfusion. For up to 2 months after PVP, there may be much more frequency, urgency and discomfort felt in the bladder and penis when passing urine.
* Open prostatectomy: For this, an incision is made in the lower abdomen under general anaesthetic or when the skin is made numb from the waist down, and the prostate removed. Urinary symptoms are improved possibly slightly better than TURP. A prolonged hospital stay is required and bleeding can occur sometimes requiring a blood transfusion. This option is reserved for very large prostates that are usually too large to be treated by one of the other options.
* Prostate stent: This is usually reserved for patients who are unsuitable for any other form of therapy. It is performed in day surgery, involves local anaesthesia, but is probably less effective than the other options. Problems are more common later than after other procedures.
* Transurethral Microwave Thermotherapy (TUMT): this is another minimally invasive option that works well in selected patients but still results in retrograde ejaculation.

**Are any special tests needed before a TURP?**

In general, the tests performed before to evaluate urinary symptoms are all that required. If there is concern that the prostate is not the only cause for problems, then a flexible cystoscopy to examine the prostate, bladder and urethra (water pipe) may be necessary. If there is concern that prostate cancer may be present, then it may be necessary to take prostate biopsies.

**What do I need to do before a TURP?**

You should take your normal medication as before the procedure. Ask your doctor if you should stop aspirin or clopidogrel (Plavix) 7 days before the operation. In addition, you may need to stop warfarin, so be sure to check what needs to be done. You may need a blood test before surgery to determine if clotting has become normal enough. In some cases, you may be allowed to continue with warfarin.

If you have symptoms that might indicate a urine infection, antibiotics may need to be given to make it safe to have the procedure. Symptoms such as pain passing urine, increased visits to the toilet, bladder discomfort, offensive smelling urine or feeling unwell may indicate a urine infection. The urine should be checked by a health professional.

No food should be eaten 6 hours and no fluid drunk 4 hours before the planned time of laser prostatectomy. Special stockings to reduce the chance of a blood clot in the legs are worn on the day of surgery.

**What happens during a TURP?**

Under general anaesthesia (i.e. asleep) or spinal anaesthesia (i.e. numb from the waist down), a telescope examination is made of the prostate and bladder using a camera mounted on the end of a tube passed through the water pipe (urethra). As the instrument used for the procedure is quite large, the urethra may be enlarged slightly by performing what is known as an optical urethrotomy. A resectoscope is passed to the prostate. This has a tiny looped wire that is used to shave away layer after layer of prostatic tissue. The shaved tissue is then flushed into the bladder and washed out through the tubing at the end of the operation.

For men with smaller prostates, an alternative operation may be chosen: a TUIP (transurethral incision of the prostate) also known as a bladder neck incision (BNI). In this case, the surgeon uses an instrument that makes a few small cuts in the prostate and bladder neck rather than removing tissue. These cuts reduce the obstruction in the urethra and improve urine flow.

A catheter is placed in the urethra. This is used to wash the bladder gently following the procedure.

**What happens immediately after a TURP?**

At the end of a TURP, a catheter will be inserted through the urethra into the bladder to drain away the urine and blood. It is normal for the fluid draining from the bladder to be bright red after the operation. There is some discomfort but usually no pain post-operatively. The catheter will be left in place for a few days and removed when the urine is pink. Drinking plenty of fluids (8 cups a day or 3 litres/day) will ensure a good flow of urine and decrease the possibility of of blood clots, which can block the catheter The catheter may cause you to have bladder spasms or to feel the need to urinate. These symptoms can be improved by drugs.

You may be given antibiotics while you are in the hospital to prevent infection. The day after surgery, you should be able to get out of bed and walk around.

The catheter is held in place by a balloon inflated with water. When the balloon is deflated, the catheter slips out. You may feel pain the first few times you urinate because the prostatic urethra will still be healing. After removal of the catheter, the desire to pass water may be very urgent and it may sting a little. This improves gradually over the next few weeks. If you have difficulties, it may be helpful for you to try to hold on for 10 minutes each time you wish to pass water. Medication can also help. Another exercise is to stop passing urine in midstream and count to three. This helps improve your control. Do not worry if you experience some dribbling of urine at this stage. Providing your bladder is emptying completely, you will be able to go home. Sometimes, an ultrasound scan of the bladder will be performed to check the bladder is empty.

**What is life like after TURP?**

Recovery can take anywhere from two to eight weeks. During the first few weeks after the operation, there may be a deterioration of some of the symptoms present before surgery. You may have some temporary problems controlling urination, but long-term incontinence rarely occurs. These symptoms can be helped by pelvic floor exercises and medication sometimes, especially to reduce the urge to pass urine.

During the first month after TURP or BNI, the scab inside the prostatic urethra may loosen and cause bleeding. The bleeding usually will subside if you increase your fluid intake and decrease your physical activity or by resting in bed and drinking fluids.

Contact your doctor if

* your urine is so red that it is difficult to see through it
* if it contains clots
* if you feel significant or increasing discomfort

In general, you should:

* Continue drinking a lot of water to flush the bladder.
* Avoid straining when moving your bowel.
* Eat a balanced diet to prevent constipation. If constipation occurs, ask your doctor if you can take a laxative.
* Don't do any heavy lifting.
* Don't drive or operate machinery.

By six to eight weeks after the operation, urination should be easier and less frequent, although you may have to get up at night to urinate. Months may go by before you feel completely normal. Generally, the longer you had the problem before you were treated, the longer your recovery time will be.

**What will happen to my sex life?**

You should not resume sexual activity until your surgeon says you are ready, which is usually about 4 weeks. Many men are afraid that prostate surgery will make their sex life a thing of the past. Today, that is generally not the case. In fact, if you have been suffering with an enlarged prostate for a long period, your sex life may actually improve after surgery.

**What happens to my erections?**

There is a small chance that TURP or open prostatectomy will affect your ability to have an erection. However, if you were in good health and were capable of having an erection before the operation, and if the nerves involved were not affected by the procedure, your chances of resuming normal sexual activity are very good. However, surgery cannot usually restore potency that was lost before the operation. Complete recovery of the sexual function you had may take up to 1 year, lagging behind a person's general recovery. The exact length of time depends on how long after symptoms appeared that BPH surgery was done and on the type of surgery.

**What happens when I ejaculate after a TURP?**

Although most men are able to continue having erections after a TURP, a prostatectomy frequently makes them sterile (unable to father children) by causing a condition called "retrograde ejaculation" or "dry climax." During sexual activity, sperm from the testes enters the urethra near the opening of the bladder. Normally, a muscle blocks off the entrance to the bladder, and the semen is expelled through the penis. However, the coring action of prostate surgery cuts this muscle as it widens the neck of the bladder. Following surgery, the semen takes the path of least resistance and enters the wider opening to the bladder rather than being expelled through the penis. Later it is harmlessly flushed out with urine.

**Will I still have an orgasm if I can’t ejaculate?**

Most men find little or no difference in the sensation of orgasm, or sexual climax, before and after surgery. Although it may take some time to get used to retrograde ejaculation, you should eventually find sex as pleasurable after surgery as before.

Many people have found that concerns about sexual function can interfere with sex as much as the operation itself. Understanding the surgical procedure and talking over any worries with the doctor before surgery often help men regain sexual function earlier.

If you have any problems after treatment for a prostate condition, talk to your doctor. Erection problems and loss of bladder control can be treated, and chances are good that you can be helped.

**Is further treatment needed later for BPH?**

Since surgery for BPH leaves behind part of the gland, it is still possible for prostate problems, including BPH, to develop again. However, surgery usually offers relief from BPH for at least 15 years. Only 10 percent of the men who have surgery for BPH eventually need a second operation for enlargement. Usually these are men who had the first surgery at an early age.

Sometimes, scar tissue resulting from surgery requires treatment in the year after surgery. Rarely, the opening of the bladder becomes scarred and shrinks, causing obstruction. This is known as 'a bladder neck contracture' and may need a surgical procedure similar to transurethral incision. More often, scar tissue may form in the urethra and cause narrowing ('urethral stricture'). This problem can usually be solved during an outpatient visit when the doctor stretches the urethra.

**Can I get prostate cancer even though I have had a TURP?**

Prostate cancer is still a possibility, since surgical procedures such as TURP do not remove the entire prostate. Prostate cancer can appear in the remaining tissue of the prostate. Therefore, it is important to maintain contact with your doctor, so that he or she can determine if any further investigation or treatment is required.

**Who does the TURP and does experience matter?**

Almost all urological surgeons are taught how to perform a TURP and so NHS or Private Consultant Urological Surgeons should be able to perform the procedure as part of their basic training.

**Who is suitable for treatment by TURP?**

Men who fulfil one of the reasons for surgery are suitable for TURP. There should be a good reason to undergo the procedure. The advantages, alternatives and risks need to be carefully considered before having the procedure.

**Who is suitable for treatment by TURP?**

If there is uncertainty about having a TURP, it may be wiser to try drugs for a period of time, as these can alleviate symptoms well in some people. TUNA can also alleviate symptoms and is less invasive than a TURP and preserve normal ejaculation.

Men with urinary symptoms and have no obstruction at all on urodynamics are unlikely to do well after a TURP.

Certain conditions or drugs make bleeding significantly more likely during or after TURP. Such drugs include aspirin, warfarin, clopidogrel and other drug thinners. Other surgical options less likely to cause bleeding such as laser prostatectomy may cause fewer problems.

Men who have an unstable heart (e.g. recent heart attack or coronary stent) or lung problem may be better waiting for a few months before having a TURP. If necessary a prostatic stent can be inserted if men are unable to pass urine and this can avoid a catheter.

Certain neurological conditions (e.g. myasthenia gravis, multiple sclerosis, or Parkinson disease) give rise to urinary symptoms in their own right. In such cases, extra special care should be taken to ensure that the prostate is in fact the primary cause for the symptoms. Video-urodynamic studies are necessary before surgery otherwise incontinence may results. If there is uncertainty about the benefit of a TURP, a prostatic stent can be inserted as this can be removed simply. Similarly, severe pelvic fractures can also give rise to incontinence after TURP.

Some men develop urinary symptoms after radiotherapy for prostate cancer. In general, it is better to delay or avoid a TURP as much as possible because incontinence may develop.

Treatment for prostate cancer by cryotherapy or brachytherapy can also cause problems if a TURP is performed. Alternatives should be sought if possible.

If an active urinary infection is present, a TURP should be deferred until the infection has been cleared or antibiotics have been administered.

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