

HoLEP (Holmium laser enucleation of the prostate). Information for patients.

What does the procedure involve?

This operation involves the telescopic removal of obstructing prostate tissue using a laser and temporary insertion of a catheter which is removed the day after surgery in the majority of men



What are the alternatives to this procedure?

Observation, modifying fluid intake, medications, use of a catheter, conventional transurethral resection or open operation. In some men more minimally invasive procedures such as Urolift or Rezum might be options. Mr Aho offers all these procedures and can advise if they are suitable options in your case.

What should I expect before the procedure?

If you are taking Clopidogrel on a regular basis, you must stop 10 days before your admission. This drug can cause increased bleeding after prostate surgery. Treatment can be re-started safely about 10 days after you get home. If you are taking Warfarin to thin your blood, you should ensure that the Urology staff are aware of this well in advance of your admission. Other blood thinning medications include apixaban, rivaroxaban and dabigatran. If you take any of these it is important to make your doctor aware as they need to be stopped 2-3 days prior to surgery.

You will usually be admitted on the day of your surgery. You will normally receive an appointment for pre- assessment before your admission, to assess your general fitness and to perform some baseline blood and urine tests. After admission, you will be seen by members of the medical team who will include the Consultant, your anaesthetist and your nurse.

You will be asked not to eat or drink for 6 hours before surgery.

What happens during the procedure?

General anaesthetic (where you will be asleep throughout the procedure) is almost always the safest form of anaesthetic for HoLEP and used in virtually all cases. If general anaesthetic is unsuitable, HoLEP can be done under a spinal anaesthetic (where you are awake but unable to feel anything from the waist down). The operation generally takes between 45-120 minutes, depending on the size of your prostate.

You will usually be given an injectable antibiotic before the procedure after checking for any drug allergies to prevent urinary tract infection. Preventative oral antibiotics are often prescribed for up to 1 week after HoLEP.

The laser is used to separate the obstructing prostate tissue from its surrounding capsule and to push it in large chunks into the bladder. An instrument (morcellator) is then used through the telescope to remove the prostate tissue from the bladder. A urethral catheter is left to drain the bladder at the end of the procedure.

What happens immediately after the procedure?

There is always some bleeding from the prostate area after the operation. The urine is usually starts to clear of blood after 24-48 hours, although it is quite common to see some blood in the urine, often intermittently, for even up to 6 weeks after surgery. This is not a concern surgically, and although blood in the urine may seem alarming to some people it is usually only a small amount of blood that is lost. It is very unusual to require a blood transfusion after HoLEP as the laser is very effective at sealing blood vessels off during the procedure. If you normally take a blood thinning medication you will be advised by the surgeon as to when to restart it. Often when restarting blood thinners there is a temporary increase in levels of blood in the urine.

It is useful to drink more fluid than normal in the first 24 hours after the operation to help clear the urine. It is however possible to drink too much fluid than is good for you so please aim to drink between 3-4 litres of fluid, but no more, each 24 hours until the urine is consistently rose in colour or clear. Sterile fluid is used to continuously flush through the catheter after HoLEP to keep the urine as clear as possible. Your nurse will gradually slow then turn off this irrigating fluid as able.

Many men are surprised at how comfortable they are after HoLEP. Apart from some minor discomfort from the catheter irritating the penis and bladder and a feeling that you need to pass urine (due to the catheter irritating the bladder), it is usual not to have any significant pain.

You are allowed to eat and drink as you like once you are awake after HoLEP.

The catheter is generally removed the morning after surgery as long as the urine is clear enough. At first, it may be painful to urinate and it may come more frequently and urgently than normal. Any initial discomfort can be relieved by simple pain relief tablets such as paracetamol and ibuprofen. Any initial urinary frequency and/or urgency usually improves within a few days. Some of your pre-HoLEP symptoms, especially frequency, urgency and getting up at night to pass urine, may not really start to improve for several months because these are often due to bladder overactivity (which takes time to resolve after prostate surgery). If these symptoms continue to bother you after HoLEP consider avoiding drinks that can irritate the bladder such as caffeinated drinks (tea and coffee), fizzy drinks and alcohol.

A large portion of prostate tissue is removed with HoLEP (around 70-80% of the total prostate volume). This has the benefits of causing maximal relief of prostate symptoms and a 99% chance of becoming catheter free if you currently have a urinary catheter in place. It also means you will almost certainly never need another prostate operation in future as the tissue removed is extremely unlikely to ever regrow. There may however be some temporary loss of urinary control (5-10% chance) until your pelvic floor muscles strengthen and recover. If you experience any urinary incontinence it is important to do pelvic floor exercises. These exercises usually resolve any urinary incontinence within a few weeks/months (often within

days). Any incontinence is normally managed by wearing a pad inside the underpants. The need to use pads beyond 3 months occurs in less than 2% of men.

Let your nurse know if you are unable to pass urine and feel as if your bladder is full after the catheter is removed. Some patients (10%), particularly those with smaller prostate glands, are unable to pass urine at all after the operation due to temporary swelling of the prostate area. If this should happen, we normally pass a catheter again to allow the swelling to resolve and the bladder to regain its function. Usually, patients who require re-catheterisation go home with a catheter in place and then return within a week for a second catheter removal which is successful in almost all cases.

90% of men only require 1 night in hospital after HoLEP.

What should I expect when I get home?

Most patients feel tired and below par for a week or two after HoLEP. You may notice that you pass very small flecks of tissue in the urine at times within the first month as the prostate area heals. This does not usually interfere with the urinary stream or cause discomfort.

What else should I look out for?

If you experience increasing frequency, burning or difficulty in passing urine or worrying bleeding, please contact your doctor for a urine check as you might have developed a urinary tract infection.

About 1 man in 5 experiences increased levels of blood in the urine 10-14 days after getting home; this is due to scabs separating from the cavity of the prostate. Increasing your fluid intake should help clear the urine after 24-48 hours. In the unlikely event of severe bleeding, passage of clots or sudden difficulty in passing urine, you should contact your GP or visit the nearest Accident and Emergency Department immediately since it may be necessary for you to be re-catheterised for bladder irrigation.

Are there any other important points?

There is a 2% chance that your erections might feel weaker after HoLEP. If the erections have not improved after 3 months your GP could consider prescribing a medication such as Viagra. There is a 70% chance that this kind of medication will help to return the erections to their pre-HoLEP state. There is a 4% chance that your erections might feel stronger after HoLEP. This is probably because any prostate medications you were taking before HoLEP can be stopped after HoLEP, and these medications often interfere with sexual function. It is very common not to be able to ejaculate any semen at the point of orgasm after prostate surgery. This is because after surgery it is much easier for the semen to travel back into the bladder than

down and out through the penis. This is not an uncomfortable or harmful consequence of surgery, and most men say the experience of orgasm remains a pleasurable sensation although it often feels a little dampened down compared to previously. If fertility is important to you then it would be best to consider an alternative such as Urolift or Rezum. Sexual activity can be resumed as soon as you are comfortable, usually after 3-4 weeks.

The symptoms of an overactive bladder (urinary frequency, urgency and being woken at night by the urge to urinate) may take 3-4 months to completely resolve, whereas the symptoms related directly to prostate obstruction (weak flow, difficulty beginning urination, stopping and starting while urinating, not being able to empty your bladder fully) usually improve within the first week after HoLEP.

The prostate tissue removed during HoLEP are sent for analysis and the results are normally available after 3-4 weeks. If the tissue is benign you and your GP will usually be informed of this by letter. If any unsuspected cancer is found the results are reviewed in a multidisciplinary meeting and the recommendations from the meeting will be explained to you in clinic/by phone. When incidental cancer is found it is almost always clinically insignificant, and the recommendation is usually to have a PSA blood test and prostate MRI scan at either 3 or 6 months after HoLEP to monitor the situation.

Routine post-HoLEP follow-up usually involves a clinic appointment with your surgeon 3 months after surgery. Several tests are normally done (including a urinary flow rate, bladder scan & symptom score) to assess the outcome of the surgery.

Most patients require a recovery period of 1-2 weeks at home before they feel ready for work. We recommend 2 weeks' rest before resuming any job, especially if it is physically strenuous and you should avoid any heavy lifting, significant abdominal straining and/or riding a bicycle during this time. You should not drive for at least 48 hours after HoLEP, and then only resume driving if you feel safe to drive.

Are there any side-effects of the operation?

Common side-effects (greater than 1 in 10)

- Temporary urethral burning, blood in the urine and frequency/urgency of urination after the procedure
- No semen is produced during an orgasm in almost all men if the prostate is fully enucleated. An ejaculation-sparing HoLEP decreases this risk to 20%. Although a pleasurable sensation of climax is still expected with retrograde (backwards) ejaculation, most men report the feeling at climax is less pleasurable than with normal ejaculation.

- In around 15% of men HoLEP does not relieve all the urinary symptoms within the first couple of months. If the persistent symptoms are a nuisance a temporary bladder calming medication (usually taken for 3 months) virtually always improves them.
- Infection of the bladder or testes requiring antibiotics (approx 10-15%)
- Failure to pass urine before hospital discharge, requiring placement of a catheter which is then removed (almost always successfully) within a week (10-15%)

Occasional side-effects (between 1 in 10 and 1 in 50)

- Loss of complete urinary control (incontinence) which normally resolves within 6 weeks (less than 10%); this can usually be resolved by doing pelvic floor exercises.
- Weaker or no erections. Several published studies have shown no significant difference in ability to have an erection in men before and after HoLEP surgery but there is still a small risk (probably less than 5%) of a decreased ability to have an erection. Some men's erections improve after surgery.
- Injury to the urethra causing delayed scar formation (urethral stricture), requiring further minor surgery (4%)
- Finding unsuspected cancer in the removed prostate tissue which may need further treatment (8%)
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Rare side-effects (between 1 in 50 and 1 in 1,000)

- Need for further prostate surgery due to regrowth of the prostate (less than 1% in the first 10 years after HoLEP)
- Failure to relieve urinary retention requiring long-term catheterisation (1%)
- Persistent loss of urinary control (urinary incontinence) requiring further surgery (0.5%)
- Retained prostate tissue fragments requiring a minor surgical procedure to retrieve them (less than 0.5%)
- Bleeding requiring blood transfusion (less than 0.5%)
- Recurrent urethral stricture requiring major reconstructive urethral surgery (urethroplasty). 0.1%.

Extremely rare side-effects (less than 1 in 1,000)

- Extensive urethral stricture requiring more than 1 major reconstructive urethral surgery (urethroplasty)
- Perforation of the bladder requiring open surgical repair
- Bleeding requiring return to the operating theatre
- Persistent overactive bladder symptoms (urgency, frequency and waking to urinate overnight), unresponsive to medication and requiring bladder botox injection
- Inability to access the prostate adequately enough to perform HoLEP

Here's what the experts have to say about holmium laser treatment for BPH:

"The HoLEP has replaced standard TURP completely and unreservedly in our hospital. There is nothing out there that has been shown to be better."

Peter Gilling, MD, Consulting Urologist at Tauranga Hospital, Tauranga, New Zealand and holmium laser prostatectomy pioneer:

"Use of the Ho:YAG laser for treatment of BPH is an important new technique that offers significant advantages over TURP....In a phrase, HoLEP compared with TURP provides 'maximal benefit with minimal morbidity'....I would envision that every significant urology department will have a holmium laser at their disposal. It is a basic tool for stones and BPH, two of the most common conditions urologists treat."
"HoLEP represents a paradigm shift in the surgical management of BPH and is endorsed by all the leading urological organizations world-wide. We have used this technique exclusively with over 2,000 patients since it evolved in the late 1990's. Once learned, HoLEP replaces both TURP and open prostatectomy, providing superior outcomes in prostates of all sizes!"

Here's what some of our patients say about HoLEP:

Mr DB, 70yr

Before the operation I was getting up at least 3 times during the night. I had to urinate very frequently during the day. I knew the location of all the Public Gents in Cambridge and all the pubs where you could use the Gents without buying any beer. Urination flow was poor and incomplete with dribbling. Erections poor and not long lasting. (I was) increasingly very tired and weak, unable to cycle because of soreness. Everything (was) an effort.

Four months after the operation: Urine flow excellent, with good immediate force, no interruptions and no dribbling. Much longer periods between urination. Some nights I sleep through without waking. Erections excellent. Much more energy, back to cycling and gardening. I feel as though I have been rescued from poisoning and liberated back to a normal life.

My family join me in thanking you very much indeed for the expert help you gave me during the recent operation.

Mr BG, 72yr

My recollection as a young man was being able to pee over a five bar gate onto a mushroom on the other side. However, during the years prior to my operation I found it difficult to pee on to a mushroom six inches from my feet. It gives me great

pleasure to now record, following my operation, that I am now able to circumnavigate the above gate once again. Yip-pee!

Within 3 weeks I was playing golf again. Within a week I was walking quite briskly and swimming as well. And within 4 weeks I was performing again with my dear wife. I have to record that I was wrong to put off this operation for so long. When I think back at the disturbed nights peeing 3 or 4 times if I was lucky, 3 total blockages when I had to have a catheter inserted, watching out for when and what I had to drink. It really was not worth the delay.

So to Mr Aho and his team very many thanks. You did a splendid job and I shall be eternally grateful.

Mr HGM, 68yr

"Presenting problem: Significant prostate bleeding and very large prostate despite previous prostate vaporisation procedure.

My experience started some 5000 miles from the shores of the UK. Early one morning I noticed that my urine was bright red. There was obviously something very wrong and I would need urgent medical assistance to stop the bleeding. My local doctors successfully accomplished this but informed me that I would need to have an operation to reduce the size of my prostate.

In the process of deliberation over where this procedure should be done, we discovered through the marvel of the internet the HoLeP procedure (Holmium Laser Enucleation of the Prostate) at the Spire Cambridge Lea Hospital, where one of the best HoLEP centres is located. My prostate was about 10 times the normal size. Coincidentally I had earlier been referred to the same hospital to have a cataract operation on both my eyes.

The challenge was whether the consultants and supporting medical staff from two separate disciplines were in a position to coordinate their surgical procedures within a given time scale, particularly as the prostate operation called for prompt action.

All in all, three surgical operations were carried out within an eight day period and I can testify that all were remarkably successful. Throughout the process I experienced little or no pain; and I only spent about three days in hospital. My prostate has been successfully reduced in size and all functions have returned to normal with no side effects. According to my consultant surgeon (Mr Tevita Aho), I should never need to have another intervention for prostate problems.

Finally you may be interested to know that I did not have to mortgage our home or the grandchildren's inheritance to accomplish this feat. The medical bills were all inclusive, modest in their amount and were easily settled within my credit card limit"

Mr ID, USA

Dear Mr. Aho,

I can't tell you how thrilled I am with the results from my HoLEP surgery - for more than a decade I had to

sit to urinate (couldn't get enough stream going to stand) and now I feel like a boy again! Having researched the HoLEP procedure on-line, I was aware of your renowned reputation in the field so your excellent skills and experience as a surgeon and urologist were to be expected but I was pleasantly surprised to find you also had such a wonderful rapport with your patient easily explaining everything so clearly and taking the time to answer any and all questions). All phases of my treatment - from when I originally contacted Janice at Cambridge Urology Partners to arrange the surgery, the admission and pre-op at Spire Cambridge Lea Hospital, the surgery and recovery, to the final post-op appointment - were superb. The efficiency and helpfulness of everyone involved were truly impressive.

Following the successful surgery, I was able to be released earlier than expected the next day since I was "voiding successfully" within 7 hours of the catheter being removed and I did not have to use any pain medication at all after the surgery. Since you were able to remove the uric acid kidney stone lingering in my bladder during the procedure, that was a huge added benefit! It was also so considerate of you to schedule the post-op appointment back at Spire Cambridge Lea Hospital since that was more convenient for me (how often do you find

specialists doing that? - definitely would never find that happening where I live).

The surgery was August 18 and I was back home in South Carolina by the night of August 27 still amazed at how great my waterworks are functioning.

Again, many thanks to you and your team for everything - I am so grateful that I chose to come to Cambridge for treatment (it was a fraction of what it would have cost here in the U.S. and was light years better treatment).

Mr AS, Bedfordshire

Dear Mr Aho

I would like to thank you especially for carrying out the HoLEP procedure but also to thank you and your staff for all the peripheral work carried out. Janice has been an absolute star in setting up the initial date and in liaising with my insurer to enable payment which helped immensely, particularly in reducing my stress levels prior to the operation

I'd like to reiterate that the HoLEP procedure you carried out gave me a step change in quality of life. My urine flow now starts on demand and stops when I've finished, the flow rate is also markedly increased. However, the real positive changes have

been to remove the worry of further acute urinary retention and to come off tamsulosin

Mr RR, Norfolk

Dear Tev

Both (my wife) and myself are very grateful that you were able to perform the operation so quickly and, more importantly, so successfully. Thanks again for all that you have done

Mr JH, Worcestershire

Dear Mr Aho

I'd like to thank you very much for performing the HoLEP on me. The aftermath of the procedure turned out to be almost painless, and I was very happy to be discharged the day after the operation. I would also like to thank Janice for responding so promptly and helpfully to my questions.

The overall improvement in flow is dramatic, to say the least. It is a long time since I could stand well back from the toilet pan and hit the back of the pan in a forceful jet! But now I can. There is a noticeable sense of having cleared my bladder, something I haven't felt for a long time.

I resumed sex with my wife on Day 15 with absolutely no discomfort, although there was no sense of definite ejaculation.. Absolutely no erectile dysfunction, whereas before the operation my erection tended to lapse after a while

Mr AF, Suffolk

Dear Mr Aho

I really want to thank you most sincerely not only for your expertise but also for the patience with which you explained the HoLEP procedure and the gentle way in which you annulled all my fears and those of my wife. As you so rightly said it was an operation without any pain. Now that I am released from all the external plumbing and with everything back to working order I am looking forward to a tranquil and comfortable future.

Procedure Code for insured patients: M6532