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This information is provided to assist Dr Berry's patients understand the robotic prostatectomy procedure and the process of preparing and recovering from surgery. Further information including a copy of this document and other documents as well as patient educational video's are available through Dr Berry's web site www.alexanderberrymd.com

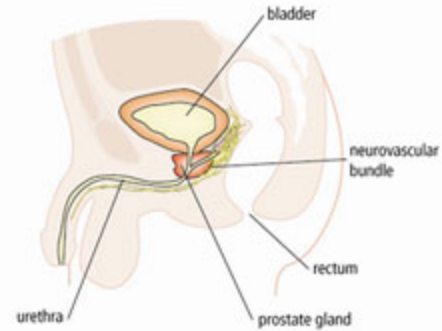
Robotic Radical Prostatectomy - General Information

Anatomic radical prostatectomy, or open surgery, is the most commonly performed surgical procedure for treatment of localized prostate cancer. A less invasive option, robotic radical prostatectomy has its basis in traditional open surgery, with less blood loss and better cosmetic results.

Robotic instruments improve visualization, enabling precise dissection of the prostate and neurovascular structures. Additionally, robotic laparoscopic suturing techniques allow for a meticulous connection of bladder to urethra following removal of the prostate. This offers the potential for less scarring of the urethra following surgery. Figure 1 displays the anatomy of the prostate, bladder, and neurovascular bundles.

Figure 1

Illustration of the neurovascular bundles and their relationship to the prostate prior to its removal. Note that once prostate is removed, the bladder must be sutured back to the urethra. The rectum sits behind the prostate and care is taken to avoid entry during surgery.

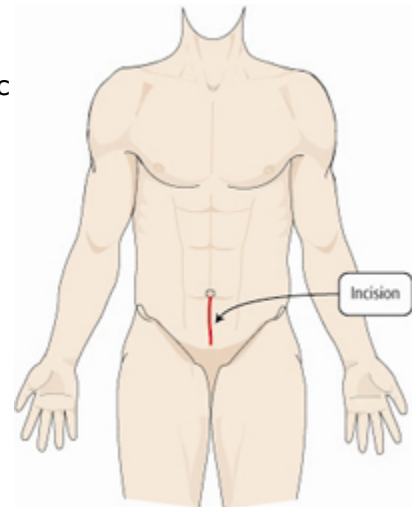


The procedure

Robotic prostatectomy is performed using a camera and thin, specialized instruments placed in the abdomen through three tiny (half inch) and one small (2 inch) incisions.(1) In comparison, open surgery requires a 5-8 inch incision. (see figure 2a and 2b)

Figure 2a

The traditional radical prostatectomy is performed through a 5-8 inch incision and travels from the belly-button to the pubic bone.



Advantages of minimally invasive robotics over open surgery

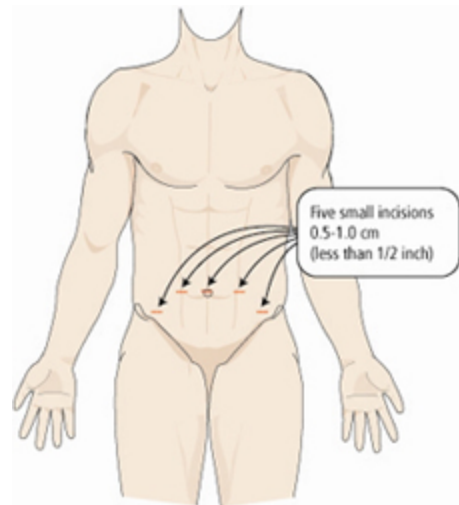
- Significantly less blood loss (tenfold lower rate of blood transfusions)
- Better cosmetic result
- Quicker return to normal activity
- Improved visualization of surgical field

Three robotic arms controlling the camera, which produces a magnified view, and two highly specialized laparoscopic instruments are introduced through 1cm incisions. First, the prostate is separated from the bladder and the seminal vesicles are dissected free from surrounding blood vessels and nerves. Next, the prostate is carefully dissected from its bed. To ensure maximum cancer control, great care is taken to determine whether the tumor has grown outside the prostate. Your surgeon does this through preoperative tests as well as tactile and visual cues during the procedure.

Figure 2b

The robotic prostatectomy is performed through 4-5 small incisions in the abdomen.

If no growth is detected, the surgeon can spare at least one neurovascular bundle (nerves that control erection) in the vast majority of patients. Both neurovascular bundles can be spared at least 80% of the time in appropriate candidates, optimizing the likelihood of return of erectile function.



In some cases, your surgeon may perform a sampling from the pelvic lymph nodes to evaluate for spread of the cancer.

The bladder is then sutured back to the urethra using robotic knot tying techniques inside the pelvis. Finally, the urinary catheter and pelvic drain are placed and incisions closed with absorbable sutures. The procedure typically lasts 2-4 hours depending on body size, prostate size and amount of inflammation surrounding the prostate.

Results

The success of surgery for prostate cancer is measured in three key ways:

- Cancer control
- Preservation of urinary continence
- Return of Erectile Function

We have found that early cancer control as well as continence and sexual function following robotic radical prostatectomy are similar to open surgery.

Cancer control

Robotic prostatectomy has been performed in this country for under ten years, so analysis of long-term cure rates is difficult. However, studies have shown that during an early period of follow-up, cancer control using the laparoscopic procedure is similar to open surgery.

Continence (urinary control)

Many patients have temporary incontinence following either open or laparoscopic prostatectomy. Recovery of continence occurs gradually after

either approach, and the majority of patients return to baseline urinary function in 6-8 months; continued improvement occurs for up to 24 months. At least 90% of patients are considered "dry" one year following surgery. However, some may choose to wear a "safety pad" to catch occasional dripping of urine during coughing, sneezing or heavy activity.

Sexual function

The return of erectile function is based on many factors, including age, preoperative function, having an active sexual partner and degree of nerve sparing. We have found that patients who were potent pre-operatively and undergo bilateral nerve sparing have a 50% to 80% likelihood of regaining potency by 12-24 months.

The nerves that control erections run close to the prostate. These are not the same nerves that control orgasm so it is possible to feel orgasm after surgery without an erection.

Please see Dr Berry's penile rehabilitation handouts for further information on the options available for you.

Remember - Age and preoperative erectile status plays an important role - At least 75% of men under 60 years of age can expect recovery of potency, while only 50% over 60 years can.

Blood loss and other surgical complications

Average blood loss is 150-200cc during laparoscopic prostatectomy compared with 800cc during open surgery. Blood transfusions are extremely rare with less than 1% chance of occurring. The other important surgical risks associated with prostatectomy are the potential for infection and damage to adjacent structures. The most important structure near the prostate is the rectum which has a less than 1% chance of being damaged during the procedure. In addition there are general risks of surgery including anesthesia, blood clots and cardiac events. These are all extremely uncommon.

There are delayed complications of surgery. The most important is the rate of bladder contracture or scarring at the site the urethra is rejoined to the bladder. For robotic surgery the rate of contracture is less than 5%.

It is also important to remember that the prostate produces 95% of ejaculatory fluid. After any prostate therapy for prostate cancer there is no ejaculation since the prostate has been either removed or destroyed.

What to expect after surgery

When you wake up

When you wake up you will notice the urinary catheter is in place. In addition there is a small pelvic drain coming from one of the abdominal incisions. The most important thing you can do is walk from your hospital bed to the door of your hospital room the evening of your surgery. The pelvic drain is typically removed on the 1st day after surgery.

Hospital stay

Patients typically are discharged the first or second day after robotic prostatectomy.

Diet

Patients are encouraged to take primarily clear fluids such as broth, soup, Popsicles, jelly and light foods such as toast and scrambled eggs that are easy to digest for 72 hours after surgery. We recommend this approach since anesthesia puts the bowel 'to sleep' and it takes 48-72 hours to clear these medications from the body. You should stay on liquids and soft foods until after your first bowel movement.

During the first 1-2 weeks from the date of your surgery, it is important to be "a person of leisure". You should avoid lifting and straining, which also means that you should avoid constipation. This can be done by any of 3 ways: 1) modify your diet, 2) use stool softeners which have been prescribed for you as well as things such as prune juice, and 3) use gentle laxatives such as Milk of Magnesia which can be purchased at your local drug store.

Postoperative pain

Pain is managed immediately after surgery with a combination of IV and oral pain medications. You will be discharged with a prescription for Vicodin which should primarily be used in the evening to prevent you from waking while rolling in bed. Minor aches that continue for 1-2 weeks following surgery are treated with over-the-counter acetaminophen (Tylenol) or ibuprofen (Motrin). Occasionally, patients experience bladder spasms due to irritation from the urinary catheter. You may recognize this with urine coming out around your catheter. This can be controlled with oral medication so please call the office for a prescription if this is occurring.

Pelvic drain

A small drain placed in the pelvis after surgery is usually removed the first or second day after surgery.

Urinary catheter

The urinary catheter is normally left in place for 7-10 days to allow for complete healing of the bladder-urethral connection. The nurses will explain to you how to keep it clean and how to use the drainage bag. You are able to shower 48hrs after the procedure and may disconnect the catheter to get in the shower. The catheter can be cleaned with soap and water at the tip of the penis to prevent dried mucus build up.

Dried mucus irritates the urethral opening causing penile tip pain. Some patients find that placing antibiotic ointment (*Bacitracin* or *Neosporin*) sparingly around the catheter at the tip of the penis will reduce irritation.

Most people find that catheter drainage into the "overnight bag" is most convenient because it simply holds more urine and does not require frequent emptying as does the leg bag. Also, it may be more convenient to wear loose fitting pants, like sweat pants or exercise pants with side snaps. The leg bag may be clipped to the pants and conveniently carried. When wearing the leg bag be careful that it does not overflow. In addition, a leg bag should be worn only during walking times because when sitting the urine may back up into the catheter. It is normal to pass small clots through the catheter although in general the urine should be clear. Your surgeon will remove the catheter in the office.

It is not uncommon to sometimes have urine come out around the catheter. This happens when your bladder squeezes from catheter irritation. As long as this is a small amount there is no need for further medication. If this is persistent please call the office since we can prescribe a medication that will reduce the frequency of this occurring.

Recovery

Overall physical recovery (not including urinary and sexual function) averages 3-4 weeks, slightly shorter than after open surgery. You should not lift anything heavier than 10lbs (a gallon of milk) for 4 weeks after surgery to minimize the chance of hernia from the small incision above your belly button where the prostate was removed.

Dr Berry recommends minimal activity in the first two weeks. In particular you should limit your driving mostly because getting in and out of a car will strain your incision and your bladder will want to empty more frequently during the healing stages.

Regaining Continence - Keep doing the Kegel's

Kegel Exercises

One of the keys to continence following robotic prostate surgery are Kegel exercises. These are familiar to many women who are encouraged to perform Kegel exercises after childbirth to minimize their chance of urinary leakage with cough or sneeze. Similarly Kegel exercises have been shown to help men regain their continence much quicker following pelvic surgery compared to not doing the exercises. They are very simple to perform and I encourage men to start performing Kegel exercises the week before surgery.

How to perform Kegel exercises

Begin by locating the muscles to be exercised:

Practice trying to stop or slow the urine without tensing the muscles of your legs, buttocks, or abdomen. It is very important not to use other muscles, because only the pelvic floor muscles help with bladder control

If you are able to slow or stop the stream or urine, you have located the correct muscles. Feel the sensation of the muscles pulling inward and upward.

Hint: Squeeze the muscles in the rectal area to tighten the rectum as if trying to hold back gas. You will be using the correct muscles.

You should hold each contraction for 6 seconds and then relax for 6 seconds. Each set of Kegel's has 5 contractions. You should perform 6 sets of Kegel exercises per day for a minimum of 6 weeks after your surgery.

Make pelvic muscle exercises a part of your daily routine: You must do them regularly to maintain bladder control. A full set takes less than a couple of minutes to perform and can be performed while watching TV, reading or stopped at a traffic light.

Do not perform Kegel exercises while the catheter is in place as this leads to discomfort but restart after the catheter is removed.

The following web site has instructions for Kegel exercises.

http://kidney.niddk.nih.gov/kudiseases/pubs/bcw_ez/insertC.htm

Tips to improve your bladder control

Use a bathroom regularly, if necessary have a urinal near your bed or in the car

Wear clothes that are easy to remove when it is time to use the toilet

Train your bladder. Use a clock to schedule times to toilet. Start by going every hour then gradually increase the interval until you arrive at a satisfactory schedule.

Remain at the toilet until your bladder is empty. Don't rush.

Empty your bladder before you start a trip of one hour or longer

Learn to squeeze before you sneeze - and before you cough, laugh, get out of chair, or lift something heavy

Establish regular bowel habits. Constipation affects bladder control.

Consider avoiding foods that we know affect the bladder, such as tomatoes, chocolate, spicy foods, and beverages, including alcohol and caffeine. These make the bladder more irritable and increase incontinence.

Watch your weight.

Stop smoking. Smoking is irritating to the bladder, and a smoker's cough may cause bladder leakage.

When you have the urge to urinate try the following:

- Stop and sit down or stand still. Relax your body by taking a few deep breaths
- Do some quick Kegel squeezes 3 or 4 times without relaxing
- Concentrate hard on suppressing the urge to urinate and wait until the urge passes or subsides

Follow-up

At your first office visit after surgery two important events will occur

- discussion of final pathology
- removal of indwelling urinary catheter

You will have been given a prescription for continence pads in the hospital. Please bring pads to your first postoperative visit to wear on your departure.

You will be seen in the office 6 weeks after the procedure where your PSA will be checked for the first time and your penile rehabilitation program, if desired, will be started. You will have your PSA reviewed at 3, 6, 9 and 12 months after the procedure and visit at Dr Berry's office at months 3, 6 and 12, then every 6 months for year 2 and yearly for 10 years after that.

Hospital Prescriptions

You will have the following prescriptions to go home with. These are

- **Vicodin** - for pain relief

You will use 2 tablets per night to sleep. You will probably only need these for 2-4 nights. During the day you can alternate Tylenol and/or Motrin (Ibuprofen) every 3 hours for mild pain.

- **Colace** - bowel softener

Anesthesia puts your bowel to sleep for 3 days. Please use the bowel softener until you feel your bowel habits are regular and you are no longer taking vicodin pills.

- **Bactrim** - antibiotic

You are given a prescription for 6 tablets. Take one tablet twice a day the day before, day of and day after the your catheter is removed. This reduces the chance of developing a post operative bladder infection.

- **Bacitracin Cream**

Can be purchased at your local pharmacy. You should apply sparingly to the tip of your penis where the catheter enters. This will reduce irritation that can occur from dry mucus scratching the urethral opening.

- **Continance liners**

Please bring to your followup appointment. They are easier to wear with tighter fitting underwear rather than boxer shorts.

PROBLEMS YOU SHOULD REPORT TO US:

a. Fevers over 101.5 Fahrenheit.

b. Heavy bleeding, or clots.

c. Drug reactions (Hives, rash, nausea, vomiting, diarrhea).

d. CALL IMMEDIATELY IF THE CATHETER FALLS OUT OR STOPS DRAINING.

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