

DA VINCI ROBOTIC RADICAL PROSTATECTOMY

“A Pathway to Recovery”

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INTRODUCTION

Radical prostatectomy is a time-tested and durable treatment option for localized prostate cancer. Its advantages include complete removal of the offending organ with pathologic examination of the cancer, the ability to perform a staging lymph node dissection, and the ability to deliver radiation therapy to the pelvis if needed at a later time. The operation is relatively straightforward and can be accomplished in 2 to 4 hours. We hope that this handout will be useful to patients with newly diagnosed prostate cancer who are in the process of considering all treatment options. In addition to our counseling sessions, we encourage consultation with a radiation oncologist. For patients selecting radical prostatectomy, we will discuss much of this information with you personally, and this handout will help serve as a reference.

Radical prostatectomy can be performed by four different approaches - radical retropubic prostatectomy (RRP), radical perineal prostatectomy (RPP), laparoscopic radical prostatectomy (LRP), and robotic-assisted radical prostatectomy (RaRP). Each approach has its unique features which we will discuss with you. Regardless of the approach, radical prostatectomy is essentially the same operation and all patients need to be familiar with the information in this handout.

BEFORE THE OPERATION

Once the decision for surgery is made, several steps occur. First, we submit a request our practice's hospital scheduler who will submit the proper forms to the hospital to look for a surgery date. This process takes several days. Once we have a date, an office assistant will let you know the date. We then schedule a pre-operative office visit, at which time we review the procedure again in detail, perform a history and physical for the hospital, sign surgical consents, and order pre-operative tests (labs, EKG, chest x-ray). A medical and/or cardiac clearance in advance is usually necessary. If your prostate biopsy was performed elsewhere, we may request a second opinion of your biopsy slides with our pathologist to confirm the Gleason score and our surgical plans regarding lymph node dissection and nerve sparing.

Hospital check-in procedures include arriving 2 hours before the procedure, nothing to eat after midnight before surgery, a cleansing enema to be given on arrival to pre-op holding, insertion of an IV, and an antibiotic. You will then meet your anesthesiologist and nurse anesthetist, who work together to place intravenous lines, administer a general anesthetic (putting you completely to sleep and inserting a breathing tube), and monitor you closely during the procedure. Your anesthesia team comes from a well-respected group.

Your family will be allowed to stand with you in the pre-operative holding area. We will greet you there and ensure that your medical chart is complete, mark the surgical site, and answer any questions you may have. After the staff rolls you to the operating room, your family will be directed to the waiting room.

Our practice consent reviews the risks and benefits of surgery, but we will review again.

a) **Mortality.**

A tough one to start with, but no surgery is without a small risk of death from anesthesia, heart attack, stroke, or pulmonary embolism (blood clots forming in the legs and traveling to the lungs). In large series of radical prostatectomies, this risk is well below 0.5%. The pre-operative testing process seeks to screen patients at risk for these events and signal the need for further testing. To prevent pulmonary embolism, compression boots are placed to the legs that intermittently massage the legs to prevent venous stasis and subsequent clot formation. After surgery, we encourage early ambulation to continue to prevent blood clots. You should wear stocking hose as long as your activity is less than normal during the first 2 weeks after surgery. During the day, they can be removed as long as you are active. Some surgeons have tried using anticoagulation medication to prevent blood clots; however they increase the risk of bleeding and lymphocele formation. Thus, most centers rely on the compression boots and early ambulation to prevent blood clots.

b) **Urinary Incontinence.**

Most patients regain a majority of their urine control by 3 months after surgery. Younger age improves results, and patients may experience additional return of control from 3-12

months. Kegal exercises are reviewed later and help return of control. Quality of life data for urine control has been collected through patient-completed questionnaires and has been published. Most studies show < 5% of men suffering long-term significant incontinence, such that they require multiple urinary pads per day and/or consideration of an artificial urinary sphincter (implantation of a prosthetic device to control urine). Another 10-15% of men have long-term mild urinary stress incontinence (wear 1-2 pads a day). Our results reveal <5% of patients require any pad use, and no patient has required an artificial urinary sphincter.

By contrast, brachytherapy patients report less urine incontinence but other urinary symptoms such as frequency, urgency, burning (painful) urination, and blood in the urine. As a result, urine bother scores for brachytherapy are identical to prostatectomy. Finally, we may discuss with you seeing a physical therapist before and/or after surgery to learn Kegal exercise techniques.

c) **Sexual Function.**

The nerves that stimulate erections are located within millimeters of the prostate capsule. In patients with good baseline erections, and low risk cancer (Gleason score 6, PSA <10), nerve sparing may be appropriate. In other situations, your surgeon may recommend a wide (non-nerve sparing) dissection to improve the chances of removing all of the cancer. For patients <60 years of age with normal erections and bilateral nerve-sparing surgery, erections return in 50-60% of patients. Increasing age and saving only one or neither nerve will certainly decrease these results. Erections can still be achieved with the assistance of a vacuum erection device or injection of medication into the base of the penis. Oral agents such as Viagra, Levitra and Cialis work well in the circumstance of bilateral nerve sparing and sometimes with unilateral nerve sparing. Once an erection is achieved, orgasm is usually not altered, although the ejaculate is dry. Some patients also report penile shortening after surgery, but this may correlate with patients not making an effort to recover sexual function. More discussion of sexual function recovery will be included later.

d) **Blood Loss.**

The prostate is located deep in the pelvis and is surrounded by numerous venous blood vessels. Blood loss is highest with the RRP (transfusion risk 5-10%, and in some cases pre-donation of your blood may be recommended. With RPP, LRP, and RaRP blood loss is reduced (transfusion risk 1-2%), and pre-donation is usually unnecessary. If unexpected heavy blood loss occurs, and pre-donated blood is not available, then random donated blood is safest. Blood donated from friends and relatives has been shown in many studies to be at a higher risk of contamination than random donated blood (contraintuitive but true). Nerve-sparing procedures may result in higher blood loss, as vigorous hemostatic maneuvers with sutures and/or cautery may damage the nerves close by, so we often accept more blood loss in favor of less trauma to the nerves.

e) **Urine Leaks, Lymph Leaks.**

Your surgery involves dissecting lymph tissue in the pelvis, and reconstructing the bladder to the urethra once the prostate is out of the way. A drain is placed in the pelvis that exits a small incision in the lower part of the abdomen (RRP, LRP, RaRP) or the perineum (RPP). Typically the drainage is high after surgery and decreases within the first two days, at which time we remove it while you are in the hospital. If lymph fluid or urine is leaking into the pelvis, the drainage will be higher and we may have to leave the drain in longer. An occasional patient will go home from the hospital with the drain, only to have a buildup of lymph fluid later that requires a repeat drainage procedure. If urine is leaking, the urinary catheter may have to be left in longer than planned. These leaks will heal with drainage.

f) **Adjacent Organ Damage.**

The rectum is only millimeters away from the prostate and can rarely be damaged, thus requiring repair. A colostomy is rarely required, but possible if a significant injury occurred. This generally only occurs if a significant scar reaction has occurred between the prostate and rectum due to the biopsy or infection. The overall risk for a rectal injury is <1%. The ureters (urine tubes draining from the kidneys to the bladder) enter the bladder close to the location where we disconnect the bladder and prostate. We take care to stay away from them during reconstruction, but it is possible to obstruct them in the process, requiring additional procedures to bypass the obstruction. The overall risk for a ureteral injury is <1%.

g) **Bladder Neck Contracture.**

This is a situation where scar tissue develops over time at the location where the bladder and urethra are sewn together. It occurs in 5-10% of RRP cases, generally weeks to months after the surgery, and causes the urine stream to become very slow. A dilation or endoscopic procedure might be required to open up this scar tissue. Bladder neck contracture rates are less common with RPP and LRP.

h) **Pneumonia, Wound Infection, Hernias.**

All surgical procedures have this risk. Early ambulation and deep breathing exercises with the incentive spirometer (taught in the hospital) will reduce pneumonia risk. If the wound becomes infected, it might need to be opened up, cleaned, and left to heal secondarily with local wound care. In some patients, the abdominal closure doesn't hold, and a hernia results that needs to be repaired.

DURING THE OPERATION

The operation will take approximately 2 to 4 hours. Your family and/or friends waiting for you should check in with the inpatient waiting room so we can be in contact if needed during and immediately after the operation. Your attending surgeon will be present and perform all critical elements of the surgery. We will talk to your family and friends immediately after the procedure. You may need to sign HIPPA forms (privacy act) to allow us to discuss your care with designated individuals.

Radical prostatectomy requires a skilled first assistant to the operating surgeon. This is generally an assistant surgeon and partner of the practice, who is also fellowship trained in laparoscopy and robotic surgery.

AFTER THE OPERATION

You will be moved to the recovery room for approximately 2 hours. The nurses will check blood counts and monitor vital signs closely as you recover from anesthesia. Generally, **they do not have visitors in recovery**, as visitation can occur upon transfer to the floor. Most of our patients go to the surgical ward. Due to the medications used during anesthesia, it is common for patients to forget most of the initial recovery period.

The night of surgery, you can rest in bed and have a few ice chips to wet your mouth. A diet is not given. It is important to work on the incentive spirometer to avoid pneumonia and post-operative fever. As we will have discussed before, you will have a small drain coming from the lower abdomen to drain fluid from the operative site. A bladder catheter is placed at surgery and secured to the leg. Sometimes, the nurses or physicians will have to irrigate the catheter if clots are present. Stocking hose are placed on your legs before surgery along with compression boots. The purpose of these is to prevent venous stasis and blood clots in the legs that can occur to the inactivity associated with the procedure.

Pain is controlled with one of two strategies. If bleeding was not a problem during the surgery, then the drug Toradol is given intravenously every 6 hours. This drug is an effective non-narcotic pain reliever. We can adjust the dose and timing as needed if pain is not sufficiently relieved. One of the side effects of morphine and all other narcotic pain relievers is that it slows down bowel function. This may result in nausea and/or delay in the ability to resume a diet. The Toradol is very useful adjunct to pain relief in that it limits the need for morphine, and therefore speeds up the recovery of bowel function. Another symptom patients may experience is called bladder spasms. The bladder catheter placed may irritate the bladder and cause it to spasm, producing the sensation of the need to void, despite the bladder being empty. If bladder spasms are experienced, report them to your nurse.

Post-Operative Day 1

Early in the morning, your physician or physician's partner will make rounds on you and write progress notes, check labs, etc. In circumstances such as vacation, meeting, satellite office duty, a cross-covering partner will see you. The goals of the first day are simple: out of bed to walk several times, and start on a diet of clear liquids. Ideally, you should walk 3-4 times with assistance during the day. Once clear liquids are tolerated, the diet is advanced to full liquids for dinner. We will start an oral antibiotic and a stool softener. Early in the morning, blood work will be drawn to check the counts, electrolytes, and kidney function. Your drain will be in place this day, emptied by staff every shift (8 hours). You should keep the compression boots on while in bed, but can remove them while ambulating.

Post-Operative Day 2

Morning and afternoon rounds are made. Labs are generally not needed. A regular diet is given. Commonly, the drain output is low and it is removed by the resident on rounds. The staff gives catheter instructions. Most patients can be discharged in the afternoon of the second day. Some require the third day for a variety of reasons.

DISCHARGE INSTRUCTIONS

Diet: regular, as tolerated. No carbonated beverages for 1 week.

Activity: walking, including stairs permitted. No heavy lifting for 4-6 weeks. No driving until the catheter is out and you are no longer taking narcotic pain medicines, and you can slam on the brakes to your car without feeling any pain. You may want to check with your auto insurance company regarding restrictions from driving after major surgery.

Medicine:

- 1) Narcotic pain reliever (Tylox, Percocet, Tylenol #3, etc.) 1-2 by mouth, as needed for pain. These pills contain a narcotic plus 500mg Tylenol. 40 pills given. For mild pain, use plain Tylenol, but don't double up with the narcotic.
- 2) Colace 100mg, twice a day, for one month. This is a stool softener.
- 3) Antibiotic – will be written per your physician on the hospital instruction sheets.
- 4) Obtain a tube of bacitracin ointment (no prescription needed), see below.

Catheter Instructions:

- 1) You will have a catheter in place usually for 7-10 days.
- 2) Keep your catheter secured to your thigh with the Velcro strap provided, or tape. If it fits you better, there is an extension tubing included so you can strap the leg back below the knee.
- 3) You will be given a large capacity night bag, a small capacity leg bag, and instructions on how to empty. Use whichever you prefer. It is best to keep the bag below your bladder, so urine will drain easily.
- 4) It is helpful to apply bacitracin ointment (available at any pharmacy without a prescription) to the tip of the penis around the catheter so this area stays moist and avoids irritation.

THINGS TO DO & EXPECT WHILE AT HOME **FOR THE 1st FEW WEEKS**

- 1) **Fatigue**. This does not mean that something is wrong. Friends and family will commonly visit after surgery and this will wear you out. Allow plenty of rest and naps as needed, but at the same time, walk frequently during the day.
- 2) **Difficulty with Sleep**. Use your pain medicines especially at night for good rest. Try and wean down to plain Tylenol during the day.
- 3) **Swelling around the penis and scrotum**. This will go away. If it occurs, elevate the scrotum with a rolled towel between your legs when lying down and wear jockey style undershorts.
- 4) **Showering**. You may shower. The steri-strips covering your incision can get wet, but don't soak them in a bath. Eventually, the steri-strips will curl at the ends and fall off in a couple of weeks.
- 5) **Catheter issues**. In addition to above, urine may at times leak around the catheter, especially during a bladder spasm. As long as urine continues to drain through the catheter into the bag, this is OK. If urine leaks around the catheter, nothing is draining, and you feel bladder fullness, then the catheter needs to be irrigated. You may need to come to the office or emergency room. Call us so we can make arrangements.
- 6) **Bowel function**. As long as you are passing flatus through the rectum and tolerating a diet, don't worry about bowel movements. Stay on the colace. Some patients go several days after surgery before the first bowel movement. Unless we personally authorize it, do not take any rectal suppository medicines in the hospital or at home. The reason is that the dissection of the prostate and the reconstruction of the bladder are extremely close to the rectum and we don't want any possible trauma in this area in the immediate post-operative period.

THINGS TO REPORT TO US IMMEDIATELY

- 1) Persistent fever over 101.5°F.
- 2) Catheter obstruction you or your home health nurse cannot handle.
- 3) Catheter falls out.
- 4) Swelling and/or pain in the lower extremities. If this occurs, we have to consider the possibility of a blood clot and need to address the issue quickly as such clots can break off and go to the lung and cause serious (possibly fatal) complications. To review, the stocking hose, compression boots, and early/often ambulation after surgery are all designed to prevent this complication, but it is always possible after any surgery (even minor).
- 5) Redness around or fluid draining from the incision, indicating possible infection.

CONTACT PROCEDURES

- 1) During business hours, call our office numbers and try and reach our nurse.
- 2) After hours, any of the office numbers will forward to the answering service, who will contact the physician on call. The physician on call can answer questions, call in prescriptions, and give limited advice. However, if a physical exam is required, you may be directed to an emergency room.
- 3) If you need to go to an emergency room, we prefer Lawnwood Regional Medical Center. In a true emergency call 911 and they will take you to the closest hospital.

FOLLOW-UP

We will talk to you about our recommended duration for the catheter and schedule an office appointment for removal. We generally use absorbable sutures, so there will not be a need for office removal of staples or sutures. We generally do not have your pathology report available while in the hospital, but will have it for your first follow-up.

AFTER THE CATHETER REMOVAL

We will fill your bladder and remove it. We will ask you to void and try to stop urination in the middle to demonstrate proper contraction of your pelvic muscles. Bring a pair of jockey-style shorts and Depends-type urinary pads, as urinary leakage is expected after catheter removal. You will begin Kegal exercises at that time (do not start them while the catheter is in place). A Kegal exercise is simply contraction of the pelvic muscles that stop urination and defecation. It is not the contraction of the thighs or buttocks. We recommend doing 10 or so Kegals each hour while awake. Each contraction should last 1-2 seconds with complete rest in between for a few seconds. By doing 10 an hour while awake, you should approach 100 or so per day. These exercises will greatly enhance your urinary recovery. Be patient, however, as recovery of urinary function takes the first 3 months to get most control back, and men continue to improve out to a year after surgery. Many men will achieve the ability to wear no pads. However, many men prefer to wear a pad as a “safety” measure in case they lose a drop or two after strenuous exertion. As we will have discussed before surgery, <5% of men have persistent urinary incontinence requiring multiple pads per day and/or consideration of an artificial urinary sphincter procedure.

We will discuss your **PATHOLOGY REPORT**. The pathology report has several pieces of information:

- 1) **Gleason score**: the grade
- 2) **Pathologic stage**:
 - a. pT2 = cancer confined to the prostate (best report to have)
 - b. pT3a = cancer extends outside the prostate capsule
 - c. pT3b = cancer invades the seminal vesicles
 - d. pT4 = cancer invades the bladder or rectum (rare)
- 3) **Margin status**: The pathologist soaks the specimen in ink and slices it into thin sections for review. If cancer touches the ink, a positive margin has occurred. Positive margins increase the chance of a PSA recurrence after surgery, as they may indicate that cancer was left behind. In some cases, this did not occur as evidenced by the many patients with positive margins who are cured.
- 4) **Lymph nodes**: If we performed a lymph node dissection, they will report the number of lymph nodes dissected and if any contained cancer.

Of course, the question on everyone’s mind is whether all of the cancer was removed and whether or not additional treatments will be needed. This is a complex topic and we will not cover it in detail here, other than to say that no one receives additional treatment immediately after surgery. The first step for everyone is to review their pathology and draw a PSA 2-3

months after surgery. At this point, we will discuss the frequency of follow-up visits and the likelihood of additional treatments such as radiation therapy and/or hormonal therapy.

Should you be taking vitamin supplements and changing your diet? No strong data exists to make this a guideline or recommendation. However, some data has implicated that certain supplements help, and may do so as prevention, treatment for localized disease, or even treatment for advanced disease. Thus, in addition to standard therapy such as prostatectomy, dietary supplements may be of benefit. The three most common are:

- 1) Vitamin E, 400 mg/day
- 2) Selenium, 200 micrograms/day
- 3) Lycopene 15 mg/day

A current recommendation is the Theralogix Prostate 2.2 Dietary Supplement, which has the above agents as well as soy protein and vitamin D (see www.theralogix.com).

Do not fall into the trap of believing that if a little may help then a lot will help more. These supplements are the moderate dose amounts, and higher amounts may be toxic. In addition, a low fat diet and exercise may help.

Early in postoperative follow-up, we will draw your first PSA and visit to discuss urinary function and sexual function. If urinary recovery is slow, there is still plenty of time for improvement. In addition, physical therapy has been shown to hasten urinary recovery by showing you additional methods of strengthening muscle tone. Early therapy for erectile dysfunction will be discussed. Data is now emerging that the earlier and more aggressive the therapy, the better chances that spontaneous erections will return. The most effective early treatment is a vacuum erection device. This device is placed over the penis, and vacuum pressure used to pull blood into the penis. A constriction ring is placed around the base of the penis to keep it there during intercourse. Many surgeons recommend using the pump without the ring daily to encourage blood flow, and then use the constriction ring for intercourse. The cost of the pumps (\$300 or so) are mostly covered by insurance plans. Penile injections are another option that gives a quality erection. Early use of the Viagra/Levitra/Cialis class of oral medications for erections may also help patients achieve erections and we will discuss use of these agents individually.

PHYSICIAN PROFILES

At Gulfstream Urology Associates, P.A., our da Vinci robotic radical prostatectomy surgeons are Board Certified and are Diplomates of the American Board of Urology. They are also active members of the American Urological Association, the Southeastern Section of the American Urological Association, and the Florida Urological Society. Complete surgeon profiles, CVs and peer-reviewed publications are available on-line at our website www.gulfstreamurology.com.

PROSTATE CANCER RISK ASSESSMENT

PROSTATE CANCER STAGING – CLINICAL (DIGITAL RECTAL EXAM FINDINGS)	
cT1a or b	Cancer seen on specimen from benign prostate procedure
cT1c	DRE normal, biopsy for elevated PSA
cT2a	Abnormality on one side of the prostate
cT2b	Abnormality on both sides of the prostate
c3a	Cancer extending beyond the capsule
cT3b	Cancer extending to the seminal vesicles
cT4	Cancer extending to the bladder, rectum, or pelvis

Gleason Scoring System

The pathologist looks at the biopsy or radical prostatectomy slides, and assigns a Gleason score 1-5 to the patterns of cancer seen. The pathologist then gives two of these scores: one for the most predominate pattern seen and a second for the second most predominant pattern seen. The two numbers are the Gleason sum, i.e. 3+3, 3+4, 4+3, etc.

Gleason score 1 and 2 are low-grade cancers rarely seen other than in specimens from benign prostate procedures. Gleason 3 is a low-grade pattern commonly seen on prostate biopsies for elevated PSA. The glands are well grouped and separate. Gleason 4 is a higher grade score when glands start to merge and look more disorganized. Gleason 5 cancers are sheets of cancer cells lacking any architecture.

As Gleason score 1-2 are rare, Gleason sum 5 or less is rare. Gleason 3+3=6 is very common and considered low grade. Gleason 3+4=7 is moderate grade, and Gleason 4+3=7 is moderate to high grade. Gleason sums of 8-10 are high grade, aggressive cancers.

PSA

PSA is a normal molecule secreted by prostate glands that normally flows into the prostatic fluid, which is part of the ejaculate. A small fraction “spills” into the blood stream. With increasing size of the prostate and/or volume of prostate cancer, the amount of PSA in the blood stream increases. An elevated PSA commonly prompts a biopsy to diagnose prostate cancer. PSA levels also predict cancer severity and ability to progress/recur after surgery or radiation. We loosely group PSA levels as:

Low risk = PSA < 10

Intermediate risk = 10 – 20

High risk = > 20

After radical prostatectomy, PSA should go to <0.1, and any elevation of PSA after treatment signals return of prostate cancer – usually in low volume in the lymph nodes or bone marrow. A rising PSA occurs in almost 1/3 of patients any time after radical prostatectomy and often prompts radiation therapy and/or hormonal therapy.

ODDS OF DYING OF PROSTATE CANCER 15 YEARS FROM DIAGNOSIS IF LEFT UNTREATED		
	Age 50 at diagnosis	Age 70 at diagnosis
Gleason 6	30%	18%
Gleason 7	70%	40%
Gleason 8-10	85%	70%

COMMON PARTIN TABLE RESULTS

	cT1c, PSA<10, Gleason 6	cT1c, PSA<10, Gleason 7	cT1c, PSA 10- 20, Gleason 6	cT1c, PSA 10- 20, Gleason 7
5 year recurrence free	89%	80%	79%	64%
% Organ Confined	67%	49%	55%	35%
% Seminal Vesicle Invasion	2%	8%	4%	12%
% Lymph Node Invasion	1%	3%	3%	8%